MODERNIZATION OF NOAA'S OCEANOGRAPHIC FLEET

ARING

 ORE THE

SUBCOMMITTEE ON OCEANOGRAPHY, GULF OF MEXICO, AND THE OUTER CONTINENTAL SHELF

OF THE

COMMITTEE ON MERCHANT MARINE AND FISHERIES HOUSE OF REPRESENTATIVES

ONE HUNDRED THIRD CONGRESS

FIRST SESSION

ON

MODERNIZATION OF NOAA'S OCEANOGRAPHIC FLEET

OCTOBER 21, 1993

Serial No. 103-69

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MODERNIZATION OF NOAA'S OCEANOGRAPHIC FLEET

THURSDAY, OCTOBER 21, 1993

HOUSE OF REPRESENTATIVES, SUBCOMMITTEE ON OCEANOGRAPHY, GULF OF MEXICO, AND THE OUTER CONTINENTAL SHELF, COMMITTEE ON MERCHANT MARINE AND FISHERIES

Washington, DC.

The Subcommittee met, pursuant to call, at 2:00 p.m., in room 1334, Longworth House Office Building, Honorable Solomon P. Ortiz, Chairman, presiding.

Present: Representatives Ortiz, Green.

Staff present: Robert Wharton, Senior Professional Staff; Richard Russell, Minority Counsel; Sheila McCready, Staff Director; John Aguirre, Clerk; Terry Schaff, Greg Gould, Chris Mann, and Dan Ashe, Professional Staff; and Margherita Woods, Minority Professional Staff.

Mr. ORTIZ. The hearing will come to order.

OPENING STATEMENT OF HON. SOLOMON P. ORTIZ, A U.S. REPRESENTATIVE FROM TEXAS, AND CHAIRMAN, SUBCOMMITTEE ON OCEANOGRAPHY, GULF OF MEXICO, AND THE OUTER CONTINENTAL SHELF

Mr. ORTIZ. Good afternoon. I would like to welcome all of you here today on behalf of the Subcommittee on Oceanography, Gulf of Mexico, and the Outer Continental Shelf. Today the Subcommittee meets to examine the efforts of the National Oceanic and Atmospheric Administration to modernize its aging research fleet.

NOAA is facing the considerable task of planning and executing a complete overhaul of its research fleet. Eleven of NOAA's 19 active vessels are more than 25 years old, four are over 30 years old, and there is a real and considerable danger that NOAA will be unable to meet its ship time needs by the year 2000. Early estimates of the cost for replacement and modernization of the fleet were approximately $1.5 billion over 15 years. However, revised estimates have placed the total cost closer to $2 billion. These numbers show that the fleet modernization initiative is a major Federal action which will consume a large portion of NOAA's budget well into the next century.

Even while acknowledging how important and expensive this modernization is going to be, NOAA has provided little information to the Congress, let alone a formal plan. With passage last year of the NOAA Fleet Modernization Act, Congress has hoped to convey

to NOAA the importance of developing and transmitting to Congress a detailed plan for the modernization, and intended for that plan to provide a framework by which the Administration and Congress could work together toward implementation. I hope that NOAA will begin to provide those details today and that we can continue a process which has been delayed far too long.

As part of the plan required by the Modernization Act, NOAA was required to investigate various alternatives to building and operating its own fleet. I think that we will hear today, directly from the sources of some of these alternatives, that cost- effective options do exit. I also hope that we will hear that NOAA is actively pursuing these options.

I want to emphasize the importance of this modernization. We cannot leave NOAA without the ability to carry out its mission. We also need to recognize that money is very scarce. We might not be able to afford for NOAA to build and maintain vessels for all its missions. NOAA may need to consider some mix of owned and leased capability as a long-term solution to meeting missions needs, and I hope that this will be reflected in NOAA's modernization plan.

This hearing today is another step in the continuing efforts of this Subcommittee to work with NOAA and other interested parties to assure that all opportunities are examined so that the modernization can take place in the most timely and cost efficient manner possible.

Mr. ORTIZ. Unfortunately because of the many committee and conference meetings, we are unable to have the ranking member of the Subcommittee, Mr. Weldon, with us right now, nor Mr. Fields, the ranking member of the Full Committee. And at this moment I would request unanimous consent that their statements be included for the record. Hearing no objection, so ordered.

[The statement of Mr. Weldon follows:]

STATEMENT OF HON. CURT WELDON, A U.S. REPRESENTATIVE FROM PENNSYLVANIA, AND RANKING MINORITY MEMBER, SUBCOMMITTEE ON OCEANOGRAPHY, GULF OF MEXICO, AND THE OUTER CONTINENTAL SHELF

Mr. Chairman, I would like to begin by thanking you for holding this hearing. The National Oceanic and Atmospheric Administration's (NOAA) future ability to meet its crucial ocean research responsibilities is directly linked to the success of its fleet modernization program.

NOAA plans to increase its research days at sea from 3,500 to 5,760. According to NOAA, this increase will require the acquisition or refurbishment of 24 vessels over the next 15 years. The program will cost $1.9 billion.

There is no question that NOAA's fleet is aging and in need of repair and replacement. There is also little question that increasing the number of days NOAA's scientists spend at sea would yield valuable scientific information. What is unclear, however, is whether NOAA's plans are cost-effective.

Part of the problem lies with NOAA's inability to finalize its Fleet Replacement and Modernization (FRAM) Plan. The plan is long overdue. Without a formal plan, it is very difficult to fully assess the worthiness of NOAA's modernization effort.

Simply finalizing NOAA's draft FRAM Plan, though, is not the answer. In recent congressionally-mandated reports by both the General Accounting Office (GAO) and the Department of Commerce's Inspector General (IG), NOAA's fleet modernization efforts and draft FRAM Plan were seriously questioned. Both the GAO and the IG reports criticize NOAA for seemingly favoring new ship construction and acquisition over leasing or chartering.

NOAA's fleet modernization plan uses an economic model which assesses the cost-effectiveness of obtaining individual vessels by purchase, lease, or charter. As the

GAO points out in its report, by analyzing the relative costs of the preferred ship-type, not the actual mission, the assessment may not lead NOAA to pursue the most cost-effective course.

Comparing mission costs, however, may be difficult since NOAA has little experience with chartering and leasing. This must change. As both the IG and GAO reports suggest, NOAA must begin to experiment more aggressively with leasing and chartering vessels. In these times of shrinking budgets, NOAA needs to aggressively pursue every cost-saving avenue available, including chartering.

Mr. Chairman, I would like to thank you again for holding this important hearing. I am hopeful that the insights from today's panelists will help the Subcommittee develop a policy which will allow NOAA to fulfill its research mission while saving the taxpayers' money.

[The statement of Mr. Fields follows:]

STATEMENT OF HON. JACK FIELDS, A U.S. REPRESENTATIVE FROM TEXAS, AND RANKING MINORITY MEMBER, COMMITTEE ON MERCHANT MARINE AND FISHERIES

Mr. Chairman, the multi-million dollar question is how much longer can NOAA eke out support for its oceanographic and atmospheric missions from its tired armada of research vessels.

Since 1992, Congress has provided over $60 million to begin acquisition of new NOAA vessels, and this is likely to increase by at least $24 million this fiscal year. And what are we investing in? Congress has yet to see a formal Fleet Replacement and Modernization (FRAM) Plan. No contracts have been let for vessel design, much less for vessel construction. No long-term leases have been signed.

Legitimate questions have been raised about the management of NOAA's fleet modernization effort, and the Department of Commerce's Inspector General has issued the most recent in a series of congressionally-mandated reports on this topic. This report notes NOAA's failure to revise its draft FRAM Plan to account for the availability of excess Navy vessels; NOAA's refusal to seriously consider contracting, chartering, or leasing to meet its mission requirements; the lack of review by outside consultants of ship design requirements and plans; and the excessive vessel staffing levels. In addition, the General Accounting Office is here today to compare NOAA's vessel operating costs and systems with those of other oceanographic fleets.

These were all issues which concerned the Merchant Marine and Fisheries Committee when it passed the NOAA Fleet Modernization Act in 1992. NOAA has the authority to use multi-year contracts to meet its needs. It has been directed to develop and publish a FRAM Plan. NOAA was to use excess days at sea from the University-National Oceanographic Laboratory fleet to fill in the holes in its schedules. The agency was told to use nongovernmental entities to prepare vessel designs to ensure cost effectiveness. NOAA has the flexibility to modernize its fleet; it has chosen not to exercise that authority.

NOAA's track record for procuring big-ticket items is not good, as witnessed by its disastrous satellite program. I hope that this hearing can serve as a midcourse correction for the NOAA fleet modernization process. The bottom line is that Congress wants NOAA to be able to carry out its oceanographic research missions. Whether the agency does so with a NOAA-owned and operated fleet is immaterial, except perhaps to those people whose careers are tied to the continuance of a NOAA navy. Incidentally, these are the very people who are in charge of developing the fleet modernization requirements.

As you can tell, Mr. Chairman, this is an issue I feel strongly about. The potential for abuse is great and the cost to the agency and its operations will be tremendous if NOAA does not proceed expeditiously. I hope our witnesses understand the urgency of this situation and I look forward to their views.

Thank you, Mr. Chairman.

Mr. ORTIZ. At this moment I would like to see if Mr. Green has an opening statement

STATEMENT OF HON. GENE GREEN, A U.S. REPRESENTATIVE FROM TEXAS

Mr. GREEN. Thank you, Mr. Chairman, and I do have a very brief opening statement.

I'd like to commend the Chair for his leadership in conducting this hearing today concerning the modernization and replacement

of the National Oceanic and Atmospheric Administration's fleet. There's a vital need to provide more modern equipment to assure that NOAA can meet its important growing role in our maritime sciences. And if NOAA does not have the immediate modernization, the vessels will have to be replaced at even greater cost later.

It's also my understanding that a fleet evaluation study in 1987 indicated that four of the fleet's vessels required replacement instead of just modernization. And I'll look forward to hearing the testimony and the witnesses today, and also to working with you, Mr. Chairman.

Thank you.

Mr. ORTIZ. Thank you, Mr. Green.

And I would like also to state that all the statements or material that you have will be put in the record.

I would like now to introduce today's panel, which consists of representatives from Federal, academic and private organizations who have a stake in NOAA's fleet modernization.

First, we will hear from Mr. John Anderson, Jr., Associate Director for Natural Resources Management Issues with the General Accounting Office. He is accompanied by Mr. Tom Heck.

Next, is Ms. Diana Josephson, the Deputy Under Secretary for Oceans and Atmosphere at the National Oceanic and Atmospheric Administration.

Dr. Gary Brass, Chairman of the University National Oceanographic Laboratory System. Mr. John Stocker, President of the Shipbuilders Council of America and last, of course, but not least is Mr. Thomas Chance, President of C & C Technologies in Lafayette, Louisiana.

I think that now we can go ahead and hear from Mr. Johnson Anderson.

STATEMENT OF JOHN H. ANDERSON, JR., ASSOCIATE DIRECTOR, NATURAL RESOURCES MANAGEMENT ISSUES, GENERAL ACCOUNTING OFFICE

Mr. ANDERSON. Thank you, Mr. Chairman.

Due to time constraints, I will summarize my statement and ask that the entire statement be submitted for the record.

Mr. ORTIZ. No objection. So ordered.

Mr. ANDERSON. Thank you.

With me today is Tom Heck.

I appreciate the opportunity to testify on our ongoing review of NOAA's fleet modernization plans. Specifically we are reviewing the extent to which NOAA has considered using contracting or chartering to meet mission requirements in lieu of purchasing new or refurbished ships to replace its aging fleet.

NOAA's Office of Corps Operations currently operates a fleet of 18 ships which supports NOAA's fisheries and oceanic research, and chartering and mapping programs. However, the fleet is aging. In 1991 NOAA completed a plan to modernize its fleet and updated its plans this summer.

NOAA's latest plan calls for replacing the current fleet over a 15-year period by acquiring and converting six surplus Navy ships and purchasing 18 new ships. NOAA estimates that this modern-

ization effort will cost $1.9 billion in fiscal year 1995 dollars and will enable NOAA to provide 5760 days at sea for performing its various missions. However, the plan does not contain any specific estimates for contractors or charters to perform any of this work.

Over the years, GAO and others have recommended that NOAA determine whether contractors can cost-effectively perform any of NOAA's seagoing missions. Recent reports by Vice President Gore's National Performance Review and Commerce's Inspector General have also echoed the need for NOAA to consider contracting or chartering as a viable option to acquiring new or refurbished ships.

While NOAA has generally agreed with prior recommendations to experiment more with contracting or chartering for vessel services, NOAA's response to date has been limited. In fiscal years 1992 and 1993 NOAA's Office of Corps Operations funded an average of about 160 days at sea each year for vessel charters in addition to the 3500 days at sea provided by NOAA's fleet. But more needs to be done.

We believe that a broader approach for evaluating the role of non-NOAA vessels could provide NOAA the information it needs to better determine the most cost-effective mix of NOAA and non-NOAA ships.

Currently NOAA uses an economic model to define what type of vessel is needed, and that evaluates whether it is more cost effective to own and operate or lease the vessel. However, this type of an evaluation is limited in that NOAA is specifying the type of ship needed to perform the mission without allowing contractors to demonstrate whether they can successfully perform the work more cost effectively.

Hydrographic charting and mapping is a particular NOAA mission that we believe needs to be assessed for performance by private contractors. NOAA's modernization plan includes $335 million for overhauling two existing ships, converting four surplus Navy ships and purchasing three new ships to ultimately provide about 1700 days at sea annually for charting and mapping work.

According to NOAA's Deputy Director of the Coast and Geodetic Survey, contractor capability currently exists to perform this type of charting and mapping work that NOAA presently performs. Representatives of several private sector charting and mapping interests have also said that the private sector could perform some of this work using smaller, less expensive vessels than NOAA uses. We also found that the Army Corps of Engineers contracts for similar charting and mapping work specifying the desired mapping and charting output rather than the vessel specifications for performing the work.

In 1992 the Congress gave NOAA multi-year leasing authority which would allow it to contract for long-term chartering arrangements, and in 1993 NOAA planned to prepare a request for proposal for chartering ships to service one or more of its mission areas. However, NOAA canceled its plans due to funding limitations.

This fiscal year NOAA plans to spend $2 million to contract for charting and mapping services. It will be important for NOAA to follow through with these plans and allow contractors flexibility in the vessels they use to perform the work. This would be a good

start for providing NOAA with valuable cost and operational data for deciding whether contracting is a viable and cost effective alternative to acquiring new or refurbished ships.

This concludes by prepared remarks, Mr. Chairman. I'd be pleased to respond to any questions your or a member of the Subcommittee may have.

[The statement of Mr. Anderson can be found at the end of the hearing.]

Mr. GREEN. We'll hold all questions until the complete panel.

Ms. Josephson.

STATEMENT OF DIANA H. JOSEPHSON, DEPUTY UNDER SECRETARY FOR OCEANS AND ATMOSPHERE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, U.S. DEPARTMENT OF COMMERCE

Ms. JOSEPHSON. Thank you, Mr. Chairman.

Mr. Chairman and Members of the Subcommittee, thank you for your invitation to testify on NOAA's fleet replacement and modernization or FRAM Program. We appreciate this Subcommittee's continued support.

Since the last hearing on the FRAM Program, a new Administration has been put in place. We have recently conducted a strategic review of NOAA's current and future statutory and program responsibilities. We have looked at what NOAA does now and what NOAA needs to do in the next century in light of the significant environmental problems and issues facing our nation. The role of NOAA's ships and the FRAM program were part of that review.

NOAA's ships support the National Marine Fisheries Service, the National Ocean Service, and the Oceanic and Atmospheric Research Labs by gathering scientific data vital to the environmental health and well being of the nation.

The current ships are old and technologically obsolete. Our strategic review concluded that replacement and modernization of NOAA's ship capability is critical to supporting NOAA's near-term and long-term mission requirements. Without the FRAM Program there would be little or no NOAA ship capability by the year 2000, with the result being that NOAA would be unable to perform most of its current missions that require data collection by ships.

This review also identified the need for additional days at sea over the 5,000 in our plan last year. Days at sea are defined by NOAA as days when a ship is at sea conducting mission operations or in transit to or from operating areas. The proposed FRAM plan would build to a 5,760 days at sea ship capability by the end of the next 15 years. Ships which are properly designed, outfitted and equipped were essential to allow NOAA to efficiently and effectively accomplish our mission. This plan is currently under review by the Administration and will be forwarded to the Congress shortly.

The proposed plan would result in 24 ships, including six conversions of relatively new T-AGOS vessels. The use of these Navy T-AGOS vessels has recently been incorporated into our plan and we will continue to assess other cost effective opportunities to meet our ship needs. These ships would incorporate state-of-the-art marine technology that would allow them to be operated more effi-

ciently than NOAA's existing fleet. All ships will be acquired to commercial standards meeting the American Bureau of Shipping and U.S. Coast Guard requirements.

A critical part of the FRAM Program is the repair to extend some of the existing ships to permit them to perform their mission effectively until replacement ships are operational. We're aware that Congress has some concerns over the RTE plans. We will review this portion of the program to ensure that the proposed actions are cost effective in the long-term.

We are also reviewing the recent appropriation conference language to evaluate any impact on the FRAM Program.

In accordance with last year's Fleet Modernization Act, the FRAM Program plan will be provided to the Congress before any contract award for the construction, conversion, lease, or RTE of a vessel of the NOAA fleet.

NOAA's ships of the future may not be all NOAA owned and operated. As the GAO has identified, we have developed an economic analysis model to compare the life cycle costs, in accordance to OMB guidelines, of government owned versus contractor owned ships and government versus contractor operation of the ships. This model was developed with input from industry. The model was validated and verified by an independent accounting firm.

An economic analysis of each new ship type will be conducted. The output from this model, along with other qualitative information, is being used to help us decide how best to acquire and operate a new ship platform. I note GAO's concern in this area and we'll reexamine our economic analysis model.

As part of the Vice President's National Performance Review, NOAA will also conduct experiments in public/private competition for ship services in each of NOAA's major mission areas; fisheries, mapping and charting, and oceanography. Actual performance experience and data from this competition will help NOAA in its decisions on how to best meet its missions and what the proper mix of government and private sector ships should be.

We also plan to work more closely with the University National Oceanographic Laboratory System, UNOLS, in scheduling the utilization of the nation's oceanographic ships and to work with UNOLS and the other Federal agencies to ensure that the future NOAA fleet is properly representative of national needs. We've asked the Marine Board of the National Research Council to review the proposed FRAM plan to help us in this process.

In fiscal year 1994 the following actions are planned:

We'll award the first T-AGOS conversion contract. Once converted, the ship will support the tropical atmosphere ocean, so called TAO Array mission. We will also award the first Repair-to-Extend, RTE, contract for the *Delaware II,* a Northeast Fisheries research ship.

In addition, the recent fiscal year 1994 appropriations conference provides funds for the acquisition of an oceanographic research vessel for NOAA. We will also conduct a competition to select shipyard design concepts to be developed for a new construction ship, which will be a coastal fisheries ship to support Alaskan fishery stock assessment and research.

The FRAM Program will benefit the declining U.S. shipbuilding and repair industry to the extent that the work is done in the United States. The fiscal year 1993 Appropriations Act and the conference version of the fiscal year 1994 Appropriation Bill do include restrictions limiting construction, repair, or alternation of NOAA vessels to U.S. yards.

That concludes my opening remarks. I would be pleased to any questions at this time.

And I'd like permission to put my longer statement in the record.

Thank you.

[The statement of Ms. Josephson can be found at the end of the hearing.]

Mr. GREEN. Without objection, your statement will be placed in the record.

STATEMENT OF DR. GARY BRASS, CHAIRMAN OF THE UNIVERSITY NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM

Dr. Brass.

Dr. BRASS. Thank you, Mr. Chairman. Thank you for the opportunity to come and present to you UNOLS' view of what we can do with regard to NOAA's needs for ship time.

UNOLS is an organization of 57 academic institutions involved in research in marine science. It includes 27 vessels and 18 operating institutions operating around the world with a variety of platforms and a variety of capabilities.

UNOLS does have ship time available. At the present, the amount of ship time that could be used and is not used runs between 500 and 750 days on a variety of classes of vessels. And if there were emergencies that would lead to extended operating use, we could probably cover as much as a 1,000 days of extra time.

The need for UNOLS vessels to cover NOAA deficiencies, I think, could become clear as NOAA vessels begin to leave the fleet. And since we do the kind of research that Oceanic and Atmospheric Research Division in NOAA does, our ships would be admirably suited to helping them out.

Indeed, we've had long discussions with NOAA. We are now involved in their scheduling process. They come to our scheduling meetings. We've gradually come to know how each other operates, and I hope that in the future we will see more cross utilization of those vessels.

There are some difficulties in the process of using UNOLS vessels to support NOAA research. One of them has been the frequent NOAA requests that we consider long-term charter. The way our scheduling system works is that you bring scientific problems, their areas and times of year that they have to be accommodated to UNOLS, and UNOLS will find an adequate vessel and schedule it in to do that. But to make long-term arrangements takes ships from our fleet that we might need to use elsewhere and ties them up for long periods of time. And it's the cultural difference between NOAA and UNOLS that we have to overcome so we can understand how to deal with that problem.

A second problem is the way we man our vessels and the way NOAA mans their vessels. NOAA has a tendency to carry large numbers of technicians aboard their ship that are permanent parts of the shipboard party. UNOLS has a tendency to send ships out with minimal technician support as a permanent part of the shipboard party and expects principal investigators to bring their technical component with them. So we need to find some ways to accommodate to this difference in our scheme of operation.

The third difficulty appears to be, and not being in NOAA it's not entirely clear to what extent this is a problem, that it may very well be that when individual scientists in the NOAA laboratories wish to use UNOLS vessel they find that the funds to support that use are going to come out of their science budgets, whereas if they use NOAA vessels even by extending their schedules, it will not come out of their science budgets. And this is a very strong incentive not to use external vessels.

Last year our estimate was that in 1992 NOAA paid about $4.2 million for UNOLS' ship time. We estimate that this year NOAA will pay about $3.4 million for NOAA's ship time. And that in 1994 it will be $1.7 million, or thereabouts. But that $1.7 million includes $1 million or $1.2 million for NOAA national undersea research programs. And, in fact, it turns out that in class 2 and 3 vessels, vessels over 150 feet in length, the total NOAA usage projected for 1994 will be only ten days. So actual NOAA usage of UNOLS' fleets are dropping substantially next year.

We hope to participate in the support of this system, but we've just had a shock, as some of you may know, about the possibility of constructing *Agor 25* and using it to replace the aging *Atlantis II* as the support vessel for the ALVIN Deep Submergence Program. So our surplus of ship time may end up evaporating, like many others.

We hope that the future is bright. We certainly have many colleagues. And, indeed, the university system that we represent trains the scientists that go to work for NOAA and run their programs. We hope that we can see a collaborative program grow between us.

There is one final difficulty, Mr. Chairman, and it's an abstruse one about GAO requirements for how we charge for ship time and how the internal charges in NOAA appear for equivalent ships. And if the Chairman is willing, I'd like to submit those for the record rather than trying to develop here.

Thank you.

Mr. GREEN. Sure, No problem. Just submit them for the record and we'll put them in.

[The attachment appears at the end of the hearing.]

Mr. GREEN. Mr. Stocker.

STATEMENT OF JOHN J. STOCKER, PRESIDENT, SHIPBUILDERS COUNCIL OF AMERICA

Mr. STOCKER. Thank you, Mr. Chairman. My name is John Stocker, and I'm President of the Shipbuilders Council of America. As you know, Mr. Chairman, the SCA is the national trade association

that represents private shipbuilding and ship repair yards as well as suppliers of marine equipment and services.

It's an honor for me to appear before this Subcommittee this afternoon and share with you the views of our industry in regard to meeting the requirements for new ships for NOAA in the future and the requirement to modernize its aging fleet.

One of our concerns, Mr. Chairman, is that it seems that getting this program up and running has been a difficult one, almost without the question the budgetary process has been slow to develop to support the construction of new ships and to engage in the modernization of existing ships. And we're pleased to note the support of this Subcommittee has been strong throughout and clearly signaling the intent of Congress to the Executive Branch that this program needs to be undertaken.

I might add, Mr. Chairman, in my prepared remarks we noted the existing budgetary authority that the Administration had requested and were pleased that the conference report has been accepted by the House and Senate. The $77 million in fiscal year 1994 will go, at least in part, to the construction of an additional new ship.

I should point out that in fiscal years 1994 and 1995 that only three ships are currently scheduled to receive even the minimal work that's contained in the Repair-to-Extend Life program. This is a fairly modest addressing of the repairs which are necessary to keep these ships operating. As it's been mentioned earlier, there is a plan to convert former U.S. Navy T-AGOS ships to suit NOAA's needs and it is important, and I was pleased to hear, that there is at least an understanding that from an economic impact it's important for these programs to begin being placed in U.S. shipyards. In that light, Mr. Chairman, let me mention two other facts that do concern us, two other factors that concern is.

The first is that in any consideration of chartering or long-term leases as an alternative, and they certainly should be considered, it should be kept in mind that many foreign operators will be offering in foreign built ships to meet the NOAA mission. And if that is seen as a way of getting around the prohibition that the Congress has put into place, we need to pay some attention to that problem. As you know, Mr. Chairman, we are facing very heavily subsidized competition in the marketplace and it would be unfortunate if U.S. government procurements were used as a way to reward the foreign subsidizers.

Second, I have testified previously before other committees and subcommittees and would like to add that we do see charting of assets as a legitimate alternative to outright procurement and certainly we believe that the private capital markets in the United States could support the delivery of a platform and operational crew to NOAA to support their scientific operations. And we would certainly encourage that as an alternative.

That concludes my summary of my remarks, Mr. Chairman. I'd be pleased to answer any questions you might have.

[The statement of Mr. Stocker can be found at the end of the hearing.]

Mr. GREEN. Mr. Chance?

STATEMENT OF THOMAS S. CHANCE, PRESIDENT, C & C TECHNOLOGIES, INC.

Mr. CHANCE. I've summarized my written statement, and I ask that this will also be added to the record.

My name is Thomas Chance and I am President of C & C Technologies, a Louisiana based hydrographic surveying firm. I was formerly the Senior Vice President of one of the world's largest offshore surveying companies employing more than 400 people. I have a Masters in Engineering, a Masters in Business Administration, and 12 years experience in offshore surveying business.

I am accompanied by my brother, Jimmy Chance, Vice President of C & C Technologies. Jimmy was formerly the Manager of Survey Boats, Inc. where he was responsible for 15 survey ships and more than 120 operating personnel. He supervised the design and construction of five survey vessels for private industry. Jimmy's educational background is in Marine Administration and he has approximately 14 years experience in that field.

First of all, there's no doubt that NOAA's fleet is beyond its useful life. Most of these vessels are 25 to 35 years old. For vessels of this class, 30 years is analogous to a car with 175,000 miles; you spend most of your time and money just trying to keep them going.

Second, NOAA has a massive backlog of marine responsibilities whose environmental and economic impact are tremendous. Most of the data on NOAA's nautical charts was collected more than 50 years ago. These old soundings are very sparse and coarsely positioned leaving large areas uncharted. Thus, boulders and pinnacles between survey lines remain uncharted to this date. In other areas the sea floor has changed tremendously due to shoaling, erosion, scuttled vessels, and other debris. The *Queen Elizabeth II* accident demonstrates the problem with NOAA's nautical charts. Fortunately, the environmental and economic damage was not as great as it could have been.

The critical problem with charts is now escalating at an exponential rate with the introduction of the Global Positioning System and Electronic Charts, which are computers showing the vessel's position on a nautical chart. The zoom features on electronic charts are allowing boaters to use the data beyond its anticipated accuracy.

Regarding contracting, I am pleased to see the support by many within Congress, NOAA, the present Administration, the Academy of Sciences, the National Ocean Industries Association, and here today the General Accounting Office. Contracting for marine services has worked for the U.S. Army Corps of Engineers, the U.S. Navy, the offshore oil industry, the marine telecommunications industry, and many others. I feel that a partnership between NOAA and the private sector is the best and most cost effective solution for this urgent problem.

There are many advantages of this "partnering" relationship. Partnering will substantially reduce the Federal capital outlay required to get NOAA going, and it will get NOAA going quickly. Competition will drive quality up and costs down. NOAA will have access to state-of-the-art equipment through service contractors. They will be able to contract for the most appropriate vessels and

equipment for each project, but will not have to bear the burden of owning and using equipment that will be obsolete in a few years. Partnering will stimulate substantial private sector investment and job growth in ship building and ship conversions. In fact, given the Fleet Study estimates, NOAA could potentially have several more ships at sea for the same cost through partnering. Finally, partnering will provide the private sector with a springboard to international markets.

The only disadvantage I see with partnering is that NOAA currently has limited experience in contracting.

Regarding the National Performance Reviews' recommendation and the NOAA Fleet Authorization Act, I would say that the private sector would be eager to compete with government groups for contracts if the subsidized competitors would include all of their real costs including capital repayment as industry must do to survive.

In summary, we are excited about the possibility of working with NOAA. Industry has waited many years for this opportunity and stands ready to help. However, regardless of your decision on this topic, you must understand that NOAA's marine group urgently needs your help. These dedicated and hard working individuals can only do so much with the scarce resources they have. And there should be no question, that a single coastal accident can be far more costly than the proposed NOAA program.

This concludes my testimony, and I will be glad to answer any questions that you may have.

[The statement of Mr. Chance can be found at the end of the hearing.]

Mr. GREEN. Just one question of you. I understand that there is an issue of liability when contracting for hydrographic services and has your company had contracts with other Federal agencies? You mentioned the Corps of Engineers and various other ones. Is there a problem on finding liability insurance?

Mr. CHANCE. Right. There are several companies that do the same kind of work that we do. We do it for the Corps of Engineers and other groups all the time in the marine market. We haven't had any problem with that.

Jimmy, if you want other comments.

Mr. JIM CHANCE. Yes. NOAA does have liability for their charts, and they have that liability whether they contract out for services to gather data for those charts or not.

I think what they need to do to minimize the problem is to get the best possible data on the chart and to have a Q & A procedure that they're happy with.

The Corps of Engineers has had a similar problem in the past. They've approached it by using the Brooks Act procurement method to see to it that they do get the best data. They use a combination of job requirements and observers to make sure they get the kind of data that they need. And as far as I know, they've been 100 percent satisfied with this.

Mr. GREEN. OK.

If you could state your name for the record, I know your brother.

Mr. JIM CHANCE. My name is Jim Chance.

Mr. GREEN. OK.

The other question I have of either of the Chance brothers is that do you have U.S. vessels that are built in U.S. yards, because I think that's probably one of the contingents that the lease outlines.

Mr. CHANCE. Sure. Jimmy's been involved in the construction of several vessels and everything we do is usually along the Gulf Coast. We're not going to go overseas. I mean, I don't know anybody that goes overseas, but I'm sure in some of the—obviously people do, but there's boats all along the Gulf Coast and there's a lot of shipyards along the Gulf Coast; Louisiana, Texas and the East Coast as well. The West Coast. There are some great companies there.

Mr. GREEN. Does any of the rest of the panel have a comment on that one question concerning the liability issue?

Ms. Josephson? OK.

Mr. Anderson, do you think NOAA is missing the boat by focusing on the ship specifications rather than the required mission output in hearing your testimony? In other words, should NOAA be shopping for certain kinds of ships or the best way to satisfy their particular mission requirements?

Mr. ANDERSON. Well, I think the economic model that NOAA's used is a good way to compare how to go about buying specific ships. But, yes, I do think they need to broaden their approach and take a look at buying services or outputs, not defining exactly how that's going to be accompanied but instead having some standards—for example, accuracy standards that they want to have achieved and then let's let the private sector see what they can provide.

Mr. GREEN. OK.

Ms. Josephson, how serious is NOAA about looking at other sources of ship time as an alternative to building and maintaining the in-house capacity and how much of the increase for the modernization in the 1995 budget do you expect to be set aside for that purpose?

Ms. JOSEPHSON. We are serious about looking at additional options, particularly in the hydrographic area. Stan Wilson, who is here, is the Assistant Administrator for our National Ocean Service, and he and his people are looking very carefully at uses of many technologies, some of which might lessen our requirements for ships, such as use of satellite technology, for example.

In the course of the next year we're going to be looking at those alternatives and potentially revising our plan.

We're also looking at the use of small boats, fast launches as opposed to having ships for all the offshore or nearshore surveys which could also change our fleet mix somewhat. We're also going to be looking at chartering. This year we will have a hydrographic charter, which is a turnkey charter. We're going out saying what data we want and we'll be having a competition for people to come in and offer whatever kind of vessel they want to offer to handle this charter.

We hope by doing so to confirm some of the data in our economic analysis model, update it, learn more about chartering, and explore the kind of issues that the GAO has raised.

We are continuing to work with UNOLS, particularly in the oceanographic area, to see what kind of use we can make of their

vessels. We have just essentially been given funding for a new oceanographic vessel as a result of the fiscal year 1994 appropriations conference for which we will be developing acquisition plans. We'll also be reassessing our plans for the FRAM during this year to accommodate this ship. This was not a budget request that we made.

The bottom line is that we are looking seriously at the alternatives. This year being the first year of the new Administration, we focused on looking at the requirements in light of our strategic plan; I testified that the number of days at sea has risen as a result of that effort. This next year, we're going to be focusing on the alternatives. We've got the Marine Board under contract to help us so that the Plan we submit a year from now will reflect the results of those efforts.

Mr. GREEN. So you expect a plan to be available a year from now?

Ms. JOSEPHSON. No. There is a revised version of the Plan which is under review by the Administration right now and should be with you within the next, hopefully, three to four weeks. Then I'm talking about the iteration next year that will reflect the result of this additional work.

Mr. GREEN. OK. Do you have any dollar amount set aside for private contracting? You mentioned hydrographic for 1994.

Ms. JOSEPHSON. We do in fiscal year 1994. We have $2 million set aside.

Mr. GREEN. 1994?

Ms. JOSEPHSON. Yes. I can't talk to you about the FY 1995 budget yet since that request is at OMB.

Mr. GREEN. OK. Let me ask one more question, Ms. Josephson, as mentioned in the testimony, one of the practical reasons for not investing 100 percent in NOAA's efforts in building and maintaining its own fleet is the possibility of changes in mission and also the change in technology. It seems like every year there's something new. In addition, the Commerce Department's Inspector General has criticized NOAA's Fleet Modernization Plan, alleging that it isn't flexible enough to deal with changing funding levels and the availability of surplus Navy ships. Are these possibilities going to be covered in the Modernization Plan?

Ms. JOSEPHSON. Well, I think we've taken into account the surplus Navy ships. In the last year, we have received commitments for up to six T-AGOS vessels, should we choose to take them. One of the possibilities for the FY 1994 oceanographic ship is an AGOR which is an existing option on the Navy AGOR contract. We are looking at these possibilities and are actively proceeding with them where they make sense.

I forget the first part of your question. I think that was the last part. The first part was?

Mr. GREEN. Oh, do you think the plan would be flexible enough?

Ms. JOSEPHSON. I think we view this FRAM Program Plan as being an annual iteration. As we learn more things, as we go down this path, we'll be coming to you with revised plans. We are required to come to you before we take any specific action for a conversion or an RTE or whatever. So, you will get a Plan plus the

opportunity to comment on any specific action. So I think between those two mechanisms we can be flexible.

Mr. GREEN. OK.

Ms. JOSEPHSON. In fact, my point is that we are beginning to show that we are flexible.

Mr. GREEN. OK. Thank you.

Dr. Brass, since you have experience with contracting and you said the amount of time is such a short time, can you give us some of the differences between the operating procedure of NOAA and UNOLS and explain maybe in layman's terms some of the major differences of what we can do to get by these differences?

Mr. BRASS. As I mentioned before, Mr. Chairman, there are a number of cultural differences between the way you UNOLS operates and the way NOAA operates. These aren't insuperable boundaries, but we need to spend some time.

Mr. GREEN. Could you have a mike moved over. I can hear you, but I'm not so sure the record can.

Mr. BRASS. As I mentioned before, Mr. Chairman, there are some cultural differences between the way UNOLS and NOAA does business. Two of those, principally, are staffing aboard the vessels and scheduling in long-term blocks versus individual science cruises. The way we normally operate in UNOLS is that a scientist funded by an agency, whatever it may be, NSF or ONR or whatever, puts in a request to UNOLS for ship time and we have several scheduling meetings a year, two principal ones, one in June and one in October after late September at about the time when appropriations have been, in the best of all possible worlds, past so we know what the money will be. And we take the mix of ships that we have and find the distribution of ships that will supply appropriate platforms for all the science that needs to be done. Because we have a large fleet of 26 and soon to be 27 vessels, we can usually find an appropriate ship to take care of a scientific need because of the many capabilities we have. If you need a ship that can take 12 scientists, we usually get a 12 scientist ship rather than a 30 scientist ship to accommodate you, and then that's one of the advantages of the large fleet and the flexibility that UNOLS has.

Asking for a year or two years and specifying individuals ships would mean giving up the flexibility to put small projects on modest size vessels and bigger projects on larger vessels. But, as I said before and as Dr. Josephson no doubt will agree, we've spent a lot of time communicating with NOAA and we're learning how to do this business as we go along. I think three years ago we didn't know anything about what we do. We're slowly learning.

One example of how this business can operate well is the NECOPP project, which was the nutrient enrichment coastal ocean processes project, I think, which originally was scheduled on the research vessel *Baldridge.* And it turned out the *Baldridge* was very large and had a very deep draft and probably wasn't appropriate for the kind of coastal oceanography that needed to be done. That program is run and will run again, I believe, next year on the research vessels *Pelican* and I believe perhaps, I'm not sure about this, *Longhorn* from the University of Texas, two smaller vessels from the UNOLS fleet that have turned out to be able to go places that the *Baldridge* can't go. And I think that program has been a

big success, I think. I know the scientists feel that it's a big success and it's one example where we are collaborating, but in this case in small coastal vessels rather than in blue water vessel.

Mr. GREEN. OK. Thank you.

Ms. JOSEPHSON. Mr. Chairman, could I correct something I said? I've just been reminded that we are not required to come to you before each specific action. Our requirement is to come to you with the FRAM Plan annually. I just wanted to correct that for the record.

Mr. GREEN. OK. Thank you.

Ms. JOSEPHSON. Thanks.

Mr. GREEN. Mr. Stocker, I think you answered this, but does it matter to your members whether they are contracts for the ships or whether they're government owned?

Mr. STOCKER. No, it doesn't, Mr. Chairman. Just as long as the project is eventually undertaken.

As I mentioned to you briefly, our industry has had some experience in arranging through private capital markets for the acquisition and operation of vessels that are on long-term lease to the government. And it can be made to work in the NOAA case as well.

Mr. GREEN. Appreciate your testimony.

That concludes the testimony for this hearing.

I want to thank you all for sharing your testimony and insights with us today.

The testimony and discussions that we have had will be particularly important as the Subcommittee drafts the reauthorization for NOAA's ocean and coastal programs.

I believe that it is very important for NOAA to have a fully functional oceanographic fleet in order to meet the many demands that are put on them.

I also believe that it is equally important for NOAA to have a well thought out, economically justifiable plan to accomplish the modernization.

I hope that NOAA will take into consideration the testimony we have heard, and especially, examine the many options which appear to be available.

I also hope that NOAA will realize that many of us in Congress will not feel comfortable with fully supporting the modernization plan until a real plan is presented.

Again, I would like to thank the witnesses for appearing before us today. Several of the Subcommittee members and myself, we'd appreciate any reply in writing to questions that may be submitted.

Thank you. The meeting is adjourned.

[Whereupon, at 2:48 p.m., the Subcommittee was adjourned, and the following was submitted for the record:]

United States General Accounting Office

GAO

Testimony

Before the Subcommittee on Oceanography,
Gulf of Mexico and the Outer Continental Shelf,
Committee on Merchant Marine and Fisheries
House of Representatives

For Release on Delivery
Expected at
2:00 p.m., EDT
Thursday
October 21, 1993

OCEAN RESEARCH VESSELS

NOAA Fleet Modernization Plan

Statement of John H. Anderson, Jr., Associate Director,
Natural Resources Management Issues,
Resources, Community, and Economic Development Division

GAO/T-RCED-94-52

Mr. Chairman and Members of the Subcommittee:

I am pleased to be here today to discuss the preliminary results of our ongoing review of the National Oceanographic and Atmospheric Administration's (NOAA) $1.9 billion (in fiscal year 1995 dollars) fleet modernization plan. The plan calls for acquiring 24 new or refurbished vessels over a 15-year period. In response to legislation enacted last year[1] and pursuant to subsequent discussions with Committee and Subcommittee staff, we are reviewing NOAA's modernization plan and the extent to which NOAA is considering alternatives to procuring new vessels, such as contracting, chartering, and leasing ships or services, to meet its program missions.

In summary, reports from GAO and the Department of Commerce's Office of Inspector General, as well as studies commissioned by the Department have all encouraged NOAA to experiment with greater use of private sector vessel services as potentially cost-effective alternatives to continued reliance on NOAA vessels. However, to date, the Office of NOAA Corps Operations, which operates NOAA's 18 active vessels, has used contracting on a very limited basis, and its fleet modernization plan contains only a small provision for vessel contracting. It will be important for NOAA to experiment with contracting and leasing options as part of its modernization planning effort in order to determine whether the private sector

[1]Public Law 102-567.

can cost effectively contribute to meeting NOAA's mission requirements. In experimenting with contracting, NOAA will need to allow contractors flexibility in how they perform the work so that NOAA obtains the cost and operational data it needs to determine the extent that contracting can meet mission needs.

BACKGROUND

The Office of NOAA Corps Operations operates a fleet of 18 active ships providing support for NOAA's programs in fisheries research, oceanographic research, and hydrographic charting and mapping. Operating at an annual cost of around $60 million, NOAA's fleet currently provides about 3,500 days at sea annually of vessel support.

Over the past several years, a number of studies have examined NOAA's fleet operations and fleet modernization needs. In response, NOAA conducted a fleet modernization study in 1990, and in 1991 completed a fleet replacement and modernization plan. At that time the plan set out a strategy and chronology for constructing a fleet of 20 new vessels over a 15-year period to provide 5,000 days at sea annually of vessel support for NOAA programs.

This summer, NOAA completed an agency-wide strategic plan which discussed the need for additional days at sea to support NOAA

programs. For fiscal year 1995 budgeting purposes NOAA received departmental approval for a plan to provide 5,760 days at sea. To meet this higher level of vessel support, NOAA envisions the need for 24 vessels, including the acquisition and conversion of 6 surplus U.S. Navy vessels to supplement the construction of 18 new vessels. NOAA estimates that the program will cost $1.9 billion. The strategic plan does not contain any specific estimates for contracting for vessel chartering but notes that limited chartering will occur, using vessels from the commercial sector and from the University-National Oceanographic Laboratory System (UNOLS)[2] to provide services when NOAA vessels are out of service.

PRIOR STUDIES RECOMMEND EXPERIMENTING WITH VESSEL CONTRACTING AND CHARTERING

The issue of NOAA's contracting for vessel support as an alternative to purchasing vessels has been the subject of a number of studies over the years. A common message of the studies is that NOAA needs to actually perform some vessel contracting and chartering to obtain necessary financial and operational data to better guide future decisions on vessel support for NOAA's program missions. In 1986, we reported to the House Committee on Merchant

[2]UNOLS, an association of universities and ocean science institutions, has a fleet of 26 oceanographic research vessels. These ships, some of which are federally owned, perform research funded mainly by federal agencies, including the National Science Foundation, the U.S. Navy, and NOAA.

Marine and Fisheries[3] that NOAA needed to develop more definitive information on private vessels' availability, capability, and cost, before taking any action to deactivate NOAA vessels. Further, in 1989, we reported to the former House Oceanography Subcommittee[4] that NOAA needed a fleet modernization plan with multiyear contracting authority to allow it to experiment with long-term chartering arrangements and, in 1992, the Congress authorized NOAA to use multiyear leasing.

NOAA responded to the recommendations in our 1986 report by requesting that the Marine Board of the National Research Council examine the issues associated with vessel chartering. In a 1988 report, the Board found that other governmental and private sector organizations have used vessel chartering successfully and that NOAA, under the appropriate circumstances, could use chartering effectively. One of the Board's recommendations was that NOAA, in order to gain chartering experience, prepare a request for proposal for chartering ships to service one or more mission areas. NOAA agreed and planned to do this in fiscal year 1993. However, NOAA cancelled its plans due to funding limitations. NOAA currently has plans to spend $2 million to contract for charting and mapping services this year.

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[3]Deactivating Research Vessels: National Oceanic and Atmospheric Administration's Use of Private Ships (GAO/RCED-86-133, June 11, 1986).

[4]Ocean Research Fleet: NOAA Needs to Plan for Long-Term Fleet Requirements (GAO/RCED-90-42, Nov. 13, 1989).

In 1992, the Department of Commerce's Oceanic and Atmospheric Management Advisory Committee[5] evaluated NOAA's modernization plan. When testifying last year before the House Oceanography Subcommittee, the Committee's vice chairman said that NOAA should make greater use of commonly available contracting options to augment its core fleet capability. He also said that NOAA needed to determine the best mix of NOAA-owned vessels and contracted vessels to meet its mission requirements. In particular, the Committee concluded that many of NOAA's mission requirements could be accomplished cost effectively without requiring that NOAA build its own special purpose ships. In addition, contracting options offered flexibility to respond to future changes in either program funding or technical mission requirements. In response, NOAA stated that it would continue to explore contracting options as well as develop an economic model to assist in evaluating these options, and would revise its fleet modernization plan accordingly.

Recent reports of Vice President Gore's National Performance Review[6] and the Department of Commerce's Office of Inspector

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[5]The Committee was established in 1990 by the Secretary of Commerce and serves as the Secretary's principal outside advisory council on NOAA matters.

[6]Creating A Government That Works Better & Costs Less, Report of the National Performance Review (September 7, 1993).

General[7] have also echoed the need for NOAA to consider contracting as a viable option to purchasing new ships.

NOAA HAS TAKEN LIMITED ACTION IN RESPONSE TO PRIOR STUDIES

While NOAA has generally agreed with prior findings that it give greater consideration to vessel chartering and leasing options, NOAA's response has been limited. In fiscal years 1992 and 1993, the Office of NOAA Corps Operations funded an average of about 160 days at sea annually for vessel charters in addition to the 3,500 days at sea provided by NOAA's fleet. The cost of the vessel charters totaled about $3 million, which the Office of NOAA Corps Operations made available from the $63 million it received during these two years for the fleet modernization program. Previously, funds for vessel charters generally had to come from individual NOAA program budgets. By making fleet modernization funds available to program offices for chartering, NOAA has taken some initial steps to gain needed experience in using chartered vessels to accomplish program missions.

Further, in response to recommendations contained in the 1992 report of the Department's Oceanic and Atmospheric Management Advisory Committee, NOAA's fleet modernization plan includes an

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[7]Semiannual Review of Fleet Replacement and Modernization Program, National Oceanic and Atmospheric Administration (EAD-5656-3-0001, September 1993).

economic model component which was developed to assess the cost effectiveness of obtaining vessels through either purchase or lease. More specifically, for each vessel identified in the modernization plan, the model identifies vessel specifications to meet program requirements and then estimates the cost of the vessel under four scenarios depicting government versus contractor ownership and operation.

THE COST EFFECTIVENESS OF USING NON-NOAA VESSELS NEEDS TO BE FULLY EXAMINED

Our preliminary work indicates that a broader approach for evaluating the role of non-NOAA vessels is needed and could result in a better determination of the most cost effective mix of NOAA and non-NOAA vessels--one which experiments with contracting for mission outputs rather than NOAA's current approach which examines options for acquiring specific vessels.

NOAA's economic model defines what type of vessel is needed to perform the desired mission, then evaluates whether it is more cost effective to own and operate or lease the vessel. NOAA has only applied its model in one instance--evaluating a replacement for its 43-year old wooden fishing trawler John N. Cobb which has been used for fisheries research. The results showed that a NOAA-owned and operated vessel would be more cost effective than a contractor-owned or operated vessel. However, this type of evaluation is limited in that NOAA is specifying the type of ship needed to

perform the mission without allowing contractors to demonstrate whether they can successfully perform the mission more cost effectively.

Hydrographic charting and mapping is a particular NOAA program mission which we believe merits further assessment as to whether the private sector can cost effectively contribute to meeting mission requirements as an alternative to continued reliance on NOAA vessels. NOAA's current plan includes $335 million for overhauling two ships, converting four surplus Navy ships, and purchasing three new ships to ultimately provide about 1,700 days at sea annually for charting and mapping.

According to NOAA's Deputy Director of the Coast and Geodetic Survey, contractor capability currently exists to perform the type of charting and mapping work that NOAA performs. Representatives of several private sector charting and mapping interests have said that some of NOAA's charting and mapping missions could be performed using smaller or less expensive vessels than NOAA uses. We also found that the U.S. Army Corps of Engineers contracts for similar charting and mapping work, specifying the desired mapping and charting output rather than vessel specifications for performing the work.

As I mentioned earlier, NOAA plans to spend $2 million to contract for charting and mapping services this fiscal year. It

will be important for NOAA to follow through on these plans, and allow contractors flexibility in how they perform the work. The cost and operational data generated from this effort should enable NOAA to begin to gather the data needed to better determine the extent to which contracting can be a viable option to the acquisition of new ships.

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Mr. Chairman, this concludes my prepared statement. I would be pleased to respond to any questions you or members of the Subcommittee may have.

GAO

United States
General Accounting Office
Washington, D.C. 20548

Resources, Community, and
Economic Development Division

November 30, 1993

The Honorable Solomon P. Ortiz
Chairman, Subcommittee on Oceanography,
  Gulf of Mexico, and the Outer
  Continental Shelf
Committee on Merchant Marine and Fisheries
House of Representatives

Attention: John Aguirre

Dear Mr. Chairman:

As requested by your letter dated October 29, 1993, enclosed are our responses to some additional questions relating to my testimony before your Subcommittee on October 21, on the National Oceanic and Atmospheric Administration's fleet modernization plan.

Please contact me on (202) 634-7535, if you or your staff have any questions.

Sincerely yours,

John H. Anderson, Jr.
Associate Director, Natural Resources
  Management Issues

Enclosure

GAO RESPONSE TO ADDITIONAL SUBCOMMITTEE QUESTIONS REGARDING NOAA'S FLEET MODENIZATION PLAN

Question 1 - How important is it for NOAA to have the specifications for their vessels reviewed by an outside source?

Response - We believe an outside review of NOAA's vessel specifications could be useful. In 1992, the Department of Commerce's Oceanic and Atmospheric Management Advisory Committee expressed concerns that vessel specifications in NOAA's modernization plan were more complex than necessary to fulfill program needs. Also, during the hearing, Mr. Chance of C&C Technologies, Inc. echoed these concerns. We believe an "outside review" of NOAA vessel requirements could be a mechanism for addressing such concerns.

Question 2 - Do you perceive any conflict of interest with the Office of NOAA Corps having responsibility for leading NOAA's fleet modernization?

Response - We have no concerns, based on our work to date, that a conflict of interest exists because the Office of NOAA Corps Operations has responsibility for fleet modernization efforts. We note that NOAA, when it set up the Systems Program Office (SPO) to examine ship acquisition options, placed SPO outside of the direct control of the NOAA Corps. This placement, in our view, tends to minimize the appearance of such a conflict.

Question 3 - How do the costs for new ship construction that NOAA has proposed compare to other vessels which have been built for similar purposes with similar specifications?

Response - Our work has not developed any information which would provide a basis for making such a cost comparison.

Question 4 - Is NOAA missing the boat by focusing on ship specifications rather than the required mission output? In other words, should NOAA be shopping for certain kinds of ships or the best way to satisfy mission requirements?

Response - It is clear to us that, to date, NOAA has focused its efforts on assessing the ship specifications needed to

meet program missions. Our concern with NOAA's efforts to date is that NOAA has not fully assessed whether the private sector can more cost-effectively meet the mission needs of NOAA's programs. An approach for making such an assessment would be to define program needs in terms of outputs, such as research data or charts and maps, and then determine the private sector's capability and costs to produce such output. The results of this assessment would provide a better basis for determining the extent to which NOAA's ships can cost-effectively meet program requirements.

Question 5 - In your studies did you find that NOAA fully accounts for all real costs associated with owning and operating vessels or are there hidden costs such as NOAA Corps pensions which might tip the scales toward chartering?

Response - We did not come across any "hidden" vessel cost elements during the course of our review. However, since we have not reviewed, in detail, NOAA's methodology for determining the costs for owning and operating its vessels, we do not know definitively whether NOAA's cost estimates are complete. For inclusion in our final report we intend to obtain additional information on the costs NOAA assigns to its vessel operations.

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TESTIMONY OF
DIANA H. JOSEPHSON
DEPUTY UNDER SECRETARY FOR OCEANS AND ATMOSPHERE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
U.S. DEPARTMENT OF COMMERCE

BEFORE THE

SUBCOMMITTEE ON OCEANOGRAPHY, GULF OF MEXICO AND THE OUTER CONTINENTAL SHELF
MERCHANT MARINE AND FISHERIES COMMITTEE
U.S. HOUSE OF REPRESENTATIVES

OCTOBER 21, 1993

Mr. Chairman and Members of the Subcommittee:

Thank you for your invitation to testify on the Fleet Replacement and Modernization (FRAM) Program of the National Oceanic and Atmospheric Administration (NOAA), U.S. Department of Commerce. The Congress recognized the importance of this program by initially appropriating $33.2 million to begin the program in FY 1992. In addition, the 1992 NOAA Authorization Act included a 15-year authorization for the FRAM Program and the FY 1993 appropriation included $30.0 million for FRAM. The FY 1994 appropriation continues this strong Congressional support.

Since the last hearing on the FRAM Program, a new Administration has been put in place. We have reviewed the FRAM Program in the context of the long term strategic plan we have developed for NOAA. We have looked at what NOAA does now and what NOAA needs to do in the next century and the role of the NOAA fleet with respect to both.

Currently, NOAA's fleet of ships supports NOAA's National Marine Fisheries Service, National Ocean Service, and the Oceanic and Atmospheric Research Laboratories by gathering scientific data vital to the environmental health and well being of the Nation. These data are used to manage fisheries stocks, allow for safe maritime commerce, and predict short- and long-term climate changes. NOAA's fleet collects data required to satisfy numerous legislative mandates and international commitments. Indeed, many recent legislative actions have increased the demand for ship time, including the Global Change Research Act, the Oil Pollution Act, the Magnuson Fishery Conservation and Management Act, the Drift Net Act, and the Clean Water Act.

NOAA's current fleet is old and technologically obsolete. Our strategic review concluded that replacement and modernization of the NOAA fleet is critical to supporting NOAA's near-term and long-term mission requirements. The Administration recognizes the need to modernize NOAA's fleet capabilities and is reviewing the proposed plan to ensure the capacity necessary to meet mission requirements.

The FRAM Program will provide new platforms with state-of-the-art marine technology although, as I will discuss later, these ships may not be all NOAA owned and operated. This technology will allow the ships to be operated more efficiently than NOAA's existing fleet. The ships also will be outfitted with current

scientific data collection instrumentation and computer systems for data processing. To prevent future technological obsolescence, NOAA will have the ability to upgrade these systems over the life of the ships by designing and building service life growth into the ships. Adequate space, weight, and power will allow for growth in the scientific instrumentation and ship systems over the life of the ship without a negative operational impact.

If the NOAA FRAM Program is not implemented, there will be essentially no NOAA fleet by the year 2000, with the result being that NOAA would be unable to perform most of its current missions that require data collection by ships.

As a result of our strategic review, NOAA has identified a need for additional days at sea (DAS) per year to support its missions. The FRAM Program Plan has been updated to reflect NOAA's near-term and long-term strategic plan. The proposed updated plan is under review by the Administration. Annual funding for the FRAM program will have to be determined in concert with NOAA's overall needs and other governmental priorities.

The plan, as proposed, would build to 5,760 DAS by the end of the first 15 years. This effort started in FY 1992 with the establishment of the FRAM Program by Congress. The first 15

years of the FRAM Program would result in a NOAA fleet of 24 ships, comprised of 18 new ships and six conversions. All ships will be acquired to commercial standards, meeting the American Bureau of Shipping (ABS) and U.S. Coast Guard requirements. Most of the proposed fleet will directly support fisheries stock assessment and fisheries research, and NOAA's charting mission. The Plan will be provided to Congress prior to entering into any contract for the conversion, Repair-to-Extend (RTE), or construction of a ship under the FRAM Program as required by the 1992 NOAA Fleet Modernization Act.

As I mentioned earlier, the future NOAA fleet may not be all NOAA owned and operated. NOAA is using an economic model to evaluate each type of new ship platform to be acquired, including lease, charter, or government ownership to determine the most cost-effective method of providing the ship platform. This model was developed with input from industry. The model was validated and verified by an independent accounting firm. The output from this model, along with other qualitative information, is being used to decide how best to acquire and operate a new ship platform.

The first utilization of the economic model, for a coastal fisheries research vessel, showed that over the life of the vessel, in net present value terms, it was clearly economically advantageous to the government to own the asset.

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As part of the Vice President's National Performance Review (NPR), NOAA also will conduct experiments in public/private competition for ship services in each of NOAA's major mission areas: fisheries, mapping and charting, and oceanography. This competition will be conducted in parallel with fleet replacement and modernization as recommended by the NPR. Actual performance experience and data from this competition will help NOAA in its decisions on how best to meet its missions and what the proper mix of government and private sector ships should be. The majority of NOAA's DAS are spent gathering fisheries data and conducting surveys to acquire charting information. Oceanographic and atmospheric research comprises the third major element of NOAA's use of ship time. For this portion of the NOAA mission, NOAA plans to work more closely with the University National Oceanographic Laboratory System (UNOLS) in cooperative scheduling of NOAA and UNOLS oceanographic ships and will continue to promote joint university projects on NOAA ships and vice versa.

The first 15 years of the FRAM program are comprised of several components: requirements definition, RTEs, conversions, and acquisition of new ship platforms and small boat construction. Spreading the program over several years allows for affordability in each budget year and eliminates the block obsolescence problem that NOAA currently faces. The majority of ships in our 1960's vintage fleet are reaching the end of their useful lives at the

same time. At the end of the first 15 years of the FRAM Program, the ships acquired first will be ready for mid-life upgrade. Because of this phased replacement, when the ships reach the end of their useful lives, usually 30 years, NOAA will be faced with a more gradual replacement of ships. This will enable NOAA to maintain a modern, up-to-date fleet to meet its changing mission needs well into the next century.

The beginning of this fleet modernization process is the establishment of ship specific requirements. This joint effort is being performed by the Office of NOAA Corps Operations, working with each of the NOAA Program Offices and the FRAM Program Office in NOAA's Systems Program Office. This is an iterative process. To date, requirements documents have been prepared for six different ships. These requirements documents then are used for the design, technical specification development, acquisition and contract execution phases. These phases are conducted by the FRAM Program Office within NOAA's Systems Program Office, with the continued participation of NOAA's ship user organizations. In order to allow time to define requirements for and acquire new and converted ships, routine and critical maintenance is being continued on the existing fleet. More extensive RTE efforts are planned for eight of the existing ships in the fleet. RTEs are not intended to be a complete rehabilitation of these ships, but rather only those upgrades necessary to permit a ship to perform its mission effectively

until a replacement ship is operational, usually an 8 to 10 year period. Ship charters will be utilized to backfill while these ships are out of service for their RTE.

The current FRAM Program plan also includes the conversion of surplus Navy T-AGOS vessels. NOAA has looked at these ships relative to its mission requirements and has determined that six of these relatively new ships could be converted to support NOAA's missions. These conversions will replace some previously planned RTEs and new ship acquisitions at substantial savings to the taxpayers. This is a prime example of converting relatively new defense assets to useful, alternative roles.

The first 15 years of the proposed FRAM plan will deliver 18 new ship platforms to the NOAA fleet. These 18 ships plus the six conversions would constitute the new NOAA fleet. As stated before, NOAA is conducting economic analyses to determine the most cost-effective way of acquiring these new ship platforms, whether by lease, charter, or government construction. As the specifications are developed, they will be provided to industry for comment. This will allow the shipbuilding industry to identify any areas where they believe NOAA's requirements or specifications are overly burdensome or costly, thus keeping the ships as affordable as possible while meeting NOAA's needs. Many of the ships will be procured utilizing a Circular of Requirements (COR), thus allowing shipbuilders to propose their

own solutions to meet NOAA's requirements. Ultimately, the contracts for new ships, whether leased, chartered, or government built, will be openly competed. This will help to ensure that the ships that are obtained meet NOAA's needs at the lowest realistic cost.

The 1992 NOAA Authorization Act prohibits NOAA from awarding a contract for the construction, repair (except emergency repairs) or alteration of any vessel of NOAA to a shipyard if the vessel benefits or would benefit from significant subsidies. In addition, the FY 1993 Appropriation Act and the Conference version of the FY 1994 Appropriation Act include language prohibiting NOAA from using appropriated FRAM funds for the construction, repair (other than emergency repair), overhaul, conversion, or modernization of vessels for NOAA in shipyards located outside the United States. In our acquisition processes, NOAA is following these statutory restrictions. To the extent that the work on NOAA ships going through RTE, conversion, or being built for NOAA is done in U.S. shipyards, the NOAA FRAM Program will provide jobs to a declining U.S. shipbuilding and ship repair industry as well as the marine vendor base that supports it.

As part of the FRAM Program, many of NOAA's small craft that support the scientific missions of NOAA laboratories also need to be replaced. These small craft are used to conduct NOAA's

oceanic studies and survey activities that are concentrated in the coastal regions of the United States. NOAA also is investigating more extensive utilization of small craft where it would be more cost-effective. For missions where long transits, heavy gear, and elaborate equipment are not required, or for work in restricted and shallow waters, small craft can be more capable, more cost-effective, and often are preferable to a larger platform. Missions that can be conducted by small craft include: biological, chemical, and physical sampling in the Great Lakes; nautical charting of bays, harbors, approaches, and coastal areas; and studies of nearshore fisheries such as lobsters and salmon, and species habitat destruction by pollutants.

In the past 18 months, much has been accomplished in the FRAM Program. Routine and critical maintenance has been conducted on the existing fleet. Ship specific requirements have been developed and approved for six ships. Design work and specification development is ongoing for the first two RTE's, DELAWARE II and OCEANOGRAPHER. A Commerce Business Daily (CBD) sources sought announcement has been issued for the DELAWARE II RTE.

Design and specification work continues for the first two T-AGOS conversions. A CBD sources sought announcement has been issued for the first T-AGOS conversion, which was funded in the FY 1993

FRAM appropriation. This first converted T-AGOS will support the Tropical Atmosphere Ocean (TAO) array mission. The second conversion, and three more like it, currently are planned to support NOAA's mapping and charting mission. Each mapping and charting conversion will save the taxpayer more than $55 million compared to conducting an RTE of an existing ship and building a new ship ten years later.

Design work and development of the COR for the first two new construction ships is ongoing. A CBD sources sought announcement for shipbuilder design proposals for the first new ship, a fisheries research vessel to support Alaskan Fisheries stock assessment, has been issued. The second new construction ship will be a nearshore charting ship which will utilize Small Waterplane Area Twin Hull (SWATH) technology. We also continue to work on the NOAA option for an AGOR oceanographic research ship on an existing U.S. Navy contract. We are working closely with the Navy as construction on their ship progresses to review proposed changes for applicability to the NOAA AGOR. Design and specification development for the construction of a small craft to support Great Lakes Research also is ongoing.

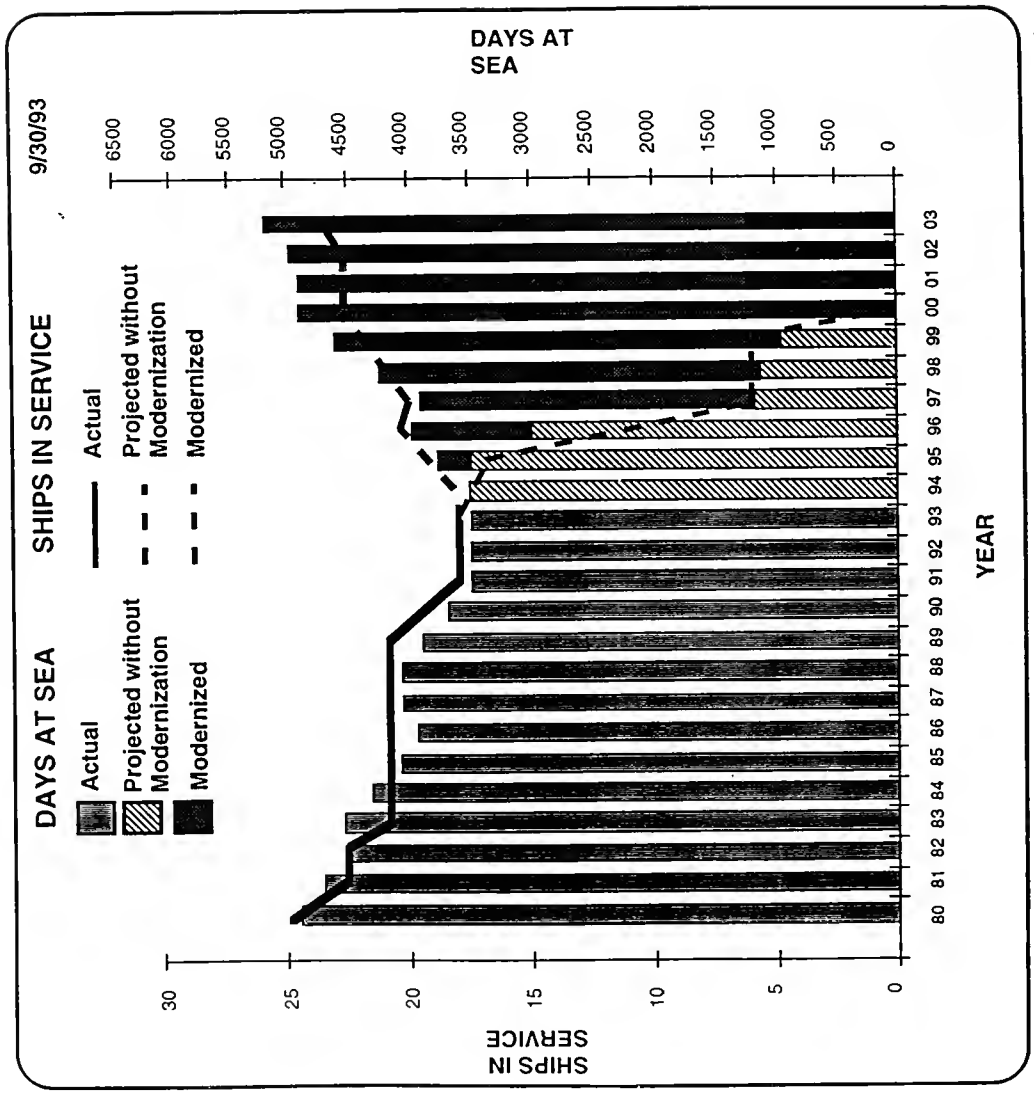
In FY 1994, we plan to award a shipyard contract for the first T-AGOS conversion. We also plan to award the contract for the first RTE, the fisheries research ship DELAWARE II. In addition, a competition will be held in FY 1994 to select shipyard design

concepts to be developed for the planned FY 1995 new construction award of the coastal fisheries research vessel, which will support Alaskan fisheries stock assessment and research. We will continue critical and routine maintenance of the existing fleet as well as the development of the specifications for the out year RTEs, conversions, and new ships. This will include the economic analyses of how to best acquire these new ship platforms. We will complete specifications to replace the small craft at the Great Lakes Environmental Research Laboratory.

I have described the status of the Fleet Replacement and Modernization Program, including what we have accomplished and our near- and long-term plans. This integrated program, consisting of routine and critical maintenance, RTEs, conversions, new acquisition by lease, charter, or government construction, and small boats will provide NOAA with the ship resources necessary to support our missions. NOAA, the Department of Commerce, and the Administration greatly appreciate the Subcommittee's, the full Committee's and the Congress's support of NOAA and this program. We are continuing to work with our sister agencies regarding coordination of fleet planning and construction and with UNOLS to ensure that the future NOAA fleet is properly representative of national needs. We have asked the Marine Board of the National Research Council to give a careful review of the FRAM plan to start this process. We look forward to continuing to work with you on this important program.

Mr. Chairman, this concludes my prepared statement. I would be happy to answer any questions.

PROPOSED PLAN



UNIVERSITY-NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM

An association of Institutions
for the coordination and support
of university oceanographic facilities

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Hon. Solomon P. Ortiz, Chairman
Subcommittee on Oceanography,
Gulf of Mexico, and the
Outer Continental Shelf
U.S. House of Representatives
Room 1334 Longworth House Office Building
Washington, DC 20515-6230

30 November 1993

Dear Mr. Ortiz,

Thank you for the opportunity to address your subcommittee concerning NOAA-UNOLS cooperation. I am of the firm belief that we can serve the nation and its taxpayers better by improving our coordination of ship use in marine science. I would like to reiterate a point that I made at the Subcommittee Hearing. UNOLS operations are similar in scope and requirements to the basic research needs of NOAA but have very little resemblance to either their survey or fisheries monitoring activities. UNOLS vessels are most appropriate for the support of the activities of OAR and with a few exceptions, would not be effective in support of survey and/or fisheries work. UNOLS vessels are extremely well equipped and capable and equipment is shared throughout the fleet in order to accomodate scientific needs and are capable of meeting virtually all of NOAA's basic research needs. As a consequence my comments are focussed only on the opportunities for collaboration with NOAA's basic research programs.

The answers to the specific questions you have posed are as follows:

Question 1: Are there currently any plans for NOAA to experiment with using UNOLS vessels? I understand that the last experiment, with the *Vickers*, was not very successful.

Answer: There are no plans for experiments with UNOLS vessels that I am aware of. There are, however, plans to continue on a modest scale the use of selected UNOLS vessels by NOAA. In particular the NOAA Program in Nutrient Enrichment and Coastal Ocean Processes (NECOP) will continue for another year. This extremely successful program developed from the NOAA realization that the NOAA ship assigned to the project, RV *Malcolm Baldridge*, was inappropriate for the experiment (too large with too much draft). The program has utilized two of the smaller UNOLS vessels, RV *Longhorn* from the University of Texas and RV *Pelican* from the Louisianna Marine Consortium (LUMCON). All reports state that this program is a success and that NOAA scientists are happy working on UNOLS vessels. I regard this as the most important interaction ever conducted between NOAA and UNOLS. The ships continue to function as UNOLS vessels and NOAA cruises are scheduled through the regular UNOLS scheduling process with no difficulty. NECOP is a clear demonstration that NOAA can use

UNOLS vessels and that by exploiting the full array of facilities available through UNOLS can be more effective than when using their own vessels. More NECOPs should be encouraged.

The real crux of NOAA-UNOLS cooperation, however, comes at the level of "intermediate" (150 - 200 feet LOA) and "large" (more than 200 feet LOA) vessels. During the *Vickers* experiment NOAA use of vessels in these classes was substantial although almost exclusively in *Vickers*. With the removal of *Vickers* from service NOAA use of intermediate and large UNOLS vessels has virtually disappeared. The current schedule calls for the use of a total of only ten days of time in these categories (in RV *Moana Wave*, Univ. of Hawaii) by NOAA in calendar 1994.

The interpretation of the *Vickers* experiment is, necessarily, subjective. It is important to note that the removal of *Vickers* from service was not directly attributable to this experiment. *Vickers* was withdrawn primarily due to the termination of internal support by the University of Southern California. *Vickers* was, in many senses, a classic case of undercapitalization; there was never a sufficient investment made in equipping and operating the vessel to ensure her success. Personally I am of divided sympathies concerning *Vickers*. She was discouraged at almost every hand by federal agencies and, I believe, would have been by UNOLS had UNOLS been asked; nevertheless USC went forward with the conversion of the ship. On the other hand, private support for the facilities needs of marine science is a phenomenon which I hope will grow and not be discouraged by the unhappy end of *Vickers*' career as a research vessel. I believe it is true, however, that only a vessel in serious financial difficulties would have agreed to conduct the experiment with NOAA that *Vickers* undertook.

The *Vickers* experiment does illustrate some of the peculiarities of the NOAA-UNOLS relationship. The arrangement with *Vickers* was for a long term charter of the vessel which was manned by NOAA Corps officers. NOAA has consistently indicated to UNOLS that they seek long-term arrangements and that they are averse to simply submitting their requirements to the UNOLS scheduling system in the same way that NSF- and ONR-funded, University-based investigators and (starting recently) Navy lab investigators do. No justification of this desire has ever been provided and it forms a substantial stumbling block to NOAA-UNOLS cooperation. Certainly the NECOP experience has shown that UNOLS can satisfactorily accomodate their scientists. This reluctance remains a mystery in UNOLS.

One cause of this reluctance may, however, derive from the other unique feature of the *Vickers* experiment, the manning of *Vickers* by NOAA Corps officers. If the employment of NOAA Corps officers in charter arrangements is a NOAA requirement (written or unwritten) there is little likelyhood of a satisfactory collaboration between UNOLS and NOAA. If the need to justify this employment drives the desire for long-term arrangements it will continue to obstruct our efforts at collaboration.

All in all, there appears to be little or no initiative on NOAA's part to revive serious collaboration on ship time use. I have expressed the sentiment to NOAA management that the experience of the 1992 discussion of NOAA use of "large" UNOLS vessels has left UNOLS reluctant to engage in further discussions with any enthusiasm until it appears that NOAA will enter into these discussions with a serious committment to carrying out their undertakings.

Question 2: How does UNOLS develop specifications for and procure new vessels? Do you consider any type of outside review?

Answer: It is important to remember that UNOLS does not procure vessels and has a very limited budget. UNOLS was established as an advisory body for the federal agencies and is only responsible for making recommendations. Nevertheless, UNOLS often plays a major role in the acquisition of ships to be operated by and for the academic oceanographic community. The process begins with the UNOLS Fleet Improvement Plan, a long range plan developed for the University based oceanographic fleet based upon projections of future research directions and agency plans. This plan is produced by the UNOLS Fleet Improvement Committee (FIC) which is composed of knowledgeable scientists from the oceanographic community supplemented by technical information from specialists in marine operations at UNOLS institutions and government agencies. The fundamental basis for this plan is the projection of future scientific need. The major modifier is the projection of future financial support for fleet and facilities acquisition and operations. The result is a practical plan for the future capital investment in oceanographic facilities, primarily ships. This plan is currently under revision and the revised plan will be available to the subcommittee in a few months.

When a need is stated in the Fleet Improvement Plan which can not be met by the current composition and numbers of the UNOLS Fleet, the FIC either as the committee of the whole or by the formation of a subcommittee produces a document called a Science Mission Requirement (SMR). This SMR is submitted in draft form throughout the oceanographic community for comments and suggestions which are included to the extent possible in the final version which is submitted to and published by the UNOLS Council on behalf of the membership. In the normal course of events (if there is such a course of events, several SMRs exist which have never proceeded) a UNOLS institution submits a proposal for a series of conceptual designs. If funded, the SMR forms the basis of a request for naval architects to submit conceptual designs. These are generally at an informal level and indicate the spectrum of ways that naval architects have conceived for meeting the requirements of the SMR. Conceptual designs can vary broadly and usually contain a multitude of new ideas for the community to consider. When completed these designs are circulated to the community as, in effect, a design portfolio for their review and comment.

The next stage in procurement is generally the submission of a proposal for a preliminary design by a UNOLS institution in collaboration with a naval architect generally selected from among those submitting conceptual designs. [If the vessel is to be constructed with Navy funds the path may switch to Navy Sea Systems Command (NAVSEA) who solicit designs based upon their own circular of requirements.] The preliminary design is overseen by FIC or a subcommittee and early designs and drawings are submitted to the scientific community for comment. This process may continue through several iterations before a final version of the preliminary design is approved and recommended to the FIC. This completed preliminary design then becomes the basis of a proposal for the construction of the vessel or vessels. UNOLS does not have a design staff nor do the individual institutions. Except for the example of NAVSEA participation, the normal UNOLS procedure is to work closely with naval architects and shipyards for design and construction guidance, relying on their experience and expertise.

An example of a recent SMR is the SMR for a large, high-endurance oceanographic research vessel which formed the basis for the design of the AGOR-23 class of research vessel (and the Navy's own TAGS-60 Class). A series of five conceptual designs was prepared in response to this SMR. AGOR-23 (RV Thompson) is already in service with the University of Washington, AGOR-24 is under construction for Scripps and AGOR-25 (WHOI) and AGOR-26 (NOAA) funds have just been appropriated. Significantly, AGOR-26 will be built for NOAA, not a university, demonstrating the utility of this process for non-university based oceanographers. This SMR also formed the basis for the same design features in the UNOLS Arctic Research Vessel preliminary design which, in turn, has its own, specialized SMR. Similar steps were taken in the construction of the three Oceanus Class intermediate size vessels (*Oceanus*, *Endeavor* and *Wecoma*) and the two Cape class coastal research vessels (*Cape Hatteras* and *Point Sur*). At all stages this process is in continual contact with the ocean-going scientific community for comment and advice. Designs and redesigns are circulated widely in the community for comment and the response is always abundant thoughtful and extremely helpful.

In recent years procurement itself has been carried out in various ways. As noted above, *Vickers* was acquired and converted by private funds. RV *Ewing* at L-DEO (Columbia University), a converted commercial, seismic-survey vessel, was procured using Columbia University funds with the understanding of a phased buy-out by NSF. The AGOR-23 series is being procured by Navy shipbuilding funds. The Cape and Oceanus class vessels were directly acquired by NSF. Several other vessels in the UNOLS Fleet (particularly smaller vessels) were acquired by state funding, notably RVs *Sproul* and *New Horizon* at SIO.

Your question specifically asked about outside reviews. Since the comment and advice procedure discussed above is public and solicits advice from all comers there is intense review by the community of marine scientists. In addition, federal agencies base their decisions to provide funds at the conceptual design, preliminary design and construction stages on their own review process. The final contract for construction is, of course, let on the basis of an open, public competition as is, generally, the selection of an operating institution.

Question 3: I understand that the differences between NOAA and UNOLS operating procedures complicates NOAA's use of UNOLS ships. Can you explain in laymans terms the major differences and what can be done to overcome them?

Answer: Their are several features of NOAA operating procedures which complicate their use of UNOLS vessels. I have mentioned two above namely NOAA's desire for long term charters and their interest in using NOAA Corps officers aboard the vessels they charter. There are other features of the NOAA system which make cooperation difficult and one feature of the UNOLS financial structure which is an impediment.

The first among these obstacles appears to be the separation of ship time funding from science funding internally in NOAA. This translates into the appearance to NOAA scientists and lab directors that time aboard NOAA vessels is "free" and aboard UNOLS vessels is very expensive if laboratory budgets are required to pay for it. Since the use of UNOLS vessels at the initiative of a NOAA lab or scientist may be considered "extra," NOAA lab directors may be asked to find the funds in their own budgets which they are naturally reluctant to do. If NOAA lab

directors and scientists were told to ask for whatever ship best fits their needs and that NOAA headquarters would supply it from the appropriate source there would probably be more use of UNOLS ships, especially on joint projects.

The second obstacle originates in the adoption of a mode of operations from the early surveying days of NOAA's predecessor organizations to scientific operations. In this mode a large permanent party of survey technicians mans the vessel and NOAA scientists are expected to find useful ways to exploit these resources. There is virtually no likelyhood that these technicians can accumulate the expertise to provide serious technical support to the scientific party and, even if they do reach a high level of expertise, the next cruise is likely to have such different needs that they will not be very useful then. This problem is manifested in the extraordinary manning levels of NOAA ships. For reference, the crew of RV *Researcher*, now RV *Malcolm Baldridge* is listed in "Oceanographic Ships Fore and Aft" as 54 with a scientific party of 22. *Baldridge* is about the same size as the new AGOR 23 series which will have a crew size around 25 or 26 and a scientific party size of 33 to 36. The perception in some NOAA circles that UNOLS provides only a "bare boat" is, in fact, close to the truth. Superfluous hands are not included aboard UNOLS vessels and investigators are expected to bring their own trained and qualified teams of experts aboard. As a result, UNOLS vessels can accomodate highly skilled chemists on one cruise and biologists or physical oceanographers on the next with geologists or geophysicists to follow, or include many specialities on interdisciplinary cruises with maximum efficiency. The perception among NOAA users that their needs may not be met aboard UNOLS vessels without the corps of survey techs they expect on NOAA vessels is based on fact and these survey techs are certainly useful for non-critical tasks. They are, however, an expensive way to provide untrained help. It would probably be more efficient for NOAA to supply far fewer technicians aboard the ship and far more to the laboratories but history and tradition have governed NOAA ship staffing policies so far.

These differences between UNOLS and NOAA are cultural differences learned from long experience but not, in fact, unchangeable. We in UNOLS hope to preserve an open mind about these differences and will strive to overcome the obstacles and welcome NOAA scientists, most of whom were originally trained at UNOLS institutions and on UNOLS vessels.

The final serious difficulty in NOAA-UNOLS collaboration revolves around accounting practices and the resultant appearance of costs. UNOLS vessels charge all federal users a daily rate. This rate is established by computing annual operating costs and dividing by operating days[1]. The result is an average daily rate which is the charge to all federal users and the minimum that can be charged to any other user. Although this seems fair enough it leads to a difficulty when NOAA considers the use of UNOLS vessels on a cruise-by-cruise basis. In order to illustrate this problem let us consider a simplified case which compares two identical vessels, one UNOLS and one NOAA. In addition, let us assume that the costs of operation are identical for the two vessels and that they are divided as follows (this division is simplified but generally reflects the division of costs for a large UNOLS vessel like the AGOR 23 class fairly closely):

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[1]UNOLS includes days in port away from the ship's home port as operating days. NOAA counts only days at sea in their calculations. The difference in calculated costs is minor.

CATEGORY	NOAA	UNOLS
FIXED COSTS	$2,000,000	$2,000,000
VARIABLE COSTS (300 OPERATING DAYS)	$2,100,000	$2,100,000
TOTAL ANNUAL COSTS	$4,100,000	$4,100,000

Let us further calculate the incremental costs (the cost of adding a day to the operations schedule) and the UNOLS daily rate.

CATEGORY	NOAA	UNOLS
INCREMENTAL COST RATE ($2,100,000/300 OPS DAYS)	$7,000	$7,000
DAILY RATE (UNOLS ONLY) ($4,100,000/300 OPS DAYS)	******	$13,667

The incremental cost rate is simply the rate at which variable costs are accumulated ($2,100,000/300 days) and represent the cost of adding one day to the schedule of either vessel. Incremental costs are predominantly food, fuel, sea pay and travel for crew, some maintenance, port fees and other costs which increase as the ship is used, fixed costs are such items as annual crew salaries and other fixed personnel costs, the operation of a marine operations office with rent, utilities, bookeeping and purchasing staff etc., the maintenance of a marine base at the ship's home port and other costs which are more or less independent of the amount of operating time. Both categories are the same for each vessel in this example.

Consider the decision facing NOAA officials called upon to decide whether to make a long transit with a NOAA vessel to accomodate a NOAA research project or to use a UNOLS vessel of equal capabilities much closer to the scene of the proposed research. To NOAA officials it appears that they can afford almost twice as much time on the NOAA vessel at $7,000 per day in incremental costs as they can afford of UNOLS ship time at $13,667 per day. The results of this analysis are sometimes ludicrous. A year or two ago NOAA asked for charter information on the use of a UNOLS vessel for a short project on the Pacific Coast. The result of an analysis of the kind described above was that in order to be less expensive than the NOAA ship available the daily rate allowed was in the vicinity of $6,000 per day and the only vessel available at that rate was half the length of the NOAA ship it was being compared with. How is the taxpayer served by these comparisons?

It is well to remember that the NOAA ship is not half as costly, it is exactly the same as the UNOLS vessel. The difference is that NOAA has already budgeted and paid the fixed costs for the NOAA vessel but is asked to contribute to the fixed costs of the UNOLS vessel. Does the UNOLS vessel make money from this contribution? No, it rebates to other users their fare share of the fixed costs. In this case, if the project required an additional ten days of UNOLS ship

time, the variable costs would increase by $70,000 to $4,170,000 and operating days increase to 310 for a new, adjusted daily rate of $13,452 per day. Billings to other agencies would be recalculated at the new, lower rate. NOAA, however, might feel justified in sending a NOAA ship to do the job even if it took 19 days, as the comparison is between 10 days on the UNOLS ship at the daily rate of $13,452 or a total of $134,520 versus 19 days on the NOAA ship at $7,000 in incremental costs for a total of $133,000. But the total cost of the UNOLS ship at 310 days is $4,170,000 and the NOAA ship at 319 days is $4,233,000. Clearly NOAA is husbanding their resources but the taxpayer is paying $63,000 more for the same job in this hypothetical example. The comparison changes when the question concerns an entire year of operations. In such a case costs are identical; in fact, this analysis suggests that in the case of an underutilized ship it is cheaper to take a NOAA vessel out of service (or refrain from bringing one in) and only pay part of the fixed costs by using a UNOLS vessel rather than all of the fixed costs for a NOAA vessel.

The result of this difference in accounting makes cruise-by-cruise chartering appear prohibitively expensive to NOAA budget officers even when it might save the taxpayers money. It also makes charter negotiations appear bizarre to the negotiating parties and virtually prohibits NOAA use of UNOLS ships without a pre-arranged agreement to do so.

I have no useful solution to offer to this last difficulty. UNOLS operators are mandated by OMB to charge average daily rates. Only direct negotiations with NOAA can overcome this hurdle. It is worth noting that private industry with under-utilized capacity will probably be glad to offer it to NOAA for charter at the incremental rate as they have probably already paid or written off their fixed costs (which are higher than UNOLS' as they include amortization in addition to the categories outlined above, UNOLS amortization costs usually disappear after the procurement process).

I have attempted to describe the difficulties which best the process of NOAA-UNOLS collaboration in ship time use in some detail as it is a complex problem with few simple solutions and some very difficult problems. There are encouraging signs; the NECOP experiment is a shining example of what can be done and done well to extend NOAA's research capabilities using UNOLS vessels. I am sure that UNOLS and NOAA are striving to overcome these difficulties and we will continue to share information and communicate our needs.

It is an honor and a pleasure for me to be allowed to represent the University based oceanographic community before the Subcommittee on Oceanography, Gulf of Mexico and Outer Continental Shelf. Please feel free to let UNOLS know if we can be of any further assistance.

Sincerely,

Garrett W. Brass

Garrett W. Brass
Chair, UNOLS

Shipbuilders Council of America

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Testimony By
John J. Stocker, President
Shipbuilders Council of America

Before the

Subcommittee on Oceanography,
Great Lakes and the Outer Continental Shelf
of the
Merchant Marine and Fisheries Committee
U.S. House of Representatives

Re: National Oceanic and Atmospheric Administration (NOAA)

1334 Longworth House Office Building
Washington, DC 20515

October 21, 1993

Mr. Chairman, and Members of the Committee, I am John J. Stocker, President of the Shipbuilders Council of America (SCA). The SCA is the national trade association which represents private shipbuilding and ship repair yards as well as suppliers of marine equipment and services. A membership list is attached.

It is an honor for me to appear before this distinguished Committee, and I appreciate the opportunity to share with you the views of the industry regarding the requirement for NOAA and the requirement to modernize its aging fleet.

Mr. Chairman, one of the verified truths of the Federal Budget process over the past ten years is that the execution of the NOAA modernization plan will continue, year by year, to be delayed. Despite the strong leadership of this Committee to move ahead, the process continues to be delayed, and the age of the ships inexorably increases, day by day, and year by year.

The passage of the NOAA Fleet Modernization Act (PL 102-567) in October of 1992 clearly signaled the intent of the Congress to proceed to provide the nation with this very necessary scientific fleet. Unfortunately, the energy and enthusiasm with which this Committee pushed the bill, and achieved its passage, did not transfer to the Executive Branch. The 1992 Act required the Secretary of Commerce to submit to the Congress a "Replacement and Modernization Plan" for

fiscal years (FYs) 1993 through 1997. The "Plan" was requested to be provided within 30 days of enactment and updated annually. At this point in time, one full year after the passage of the Act, that plan has still not been submitted. We do not know what has caused the delay by the Department of Commerce but we suggest that very little substantive progress can be made on the NOAA modernization until that plan is agreed to and submitted to the Congress for its approval and support. We believe that this Committee has a legitimate right to ask the Commerce Department why the plan has not yet been submitted.

A measure of progress on the modernization effort can be made by examining the financial resources which have been applied to date to the program. The 1992 Act mandated $50 million in FY 1993, adding $100 million in FY 1994 and then applying "such sums as are necessary for each of the fiscal years 1995, 1996 and 1997." Thus, as envisioned, $150 million would have been authorized and appropriated through FY 1994. Despite an early start to the program with $33 million in FY 1992, and $30 million in FY 1993, we are encouraged by the appropriation of $77 million in FY 1994. I hope this is a continuing trend of support for this program.

For example, in fiscal years 1994 and 1995, it is our understanding that only three ships are scheduled to receive even the minimal work contained in a Repair to Extend Life (RTE). This process should in no way be confused with a major overhaul or a Navy-like "Service Life Extension Program." Rather, it is a

very modest addressal of those repairs which are essential to keep the ship operating. In FYs 94/95, the Administration also plans to convert two former U.S. Navy TAGOS ships to suit NOAA's needs. These are relatively new ships and will bring much needed new capability, but the TAGOS conversions will solve only one part of the NOAA Fleet's more extensive modernization requirement.

On the brighter side, the Systems Program Office (SPO) has been efficiently established and is functioning in a manner which is having a credible impact on the industrial community. They have the talent and experience in that office to get the job done without further reorganizational trauma being imposed upon them.

Mr. Chairman, there is another issue which I would like to bring to the Committee's attention this afternoon. This issue is the preservation of U.S. shipyards. I firmly believe that it was not the intention of this Committee that the $1.4 billion NOAA Modernization Program be spent on the acquisition of ships from foreign shipyards. There is absolutely no assurance that the shipyards of the United States will benefit from this important business base. In fact, it is almost certain that heavily subsidized shipyards of friendly nations will benefit from these opportunities, if we do not ensure that we penalize those countries that subsidize their shipyards.

Earlier this month, President Clinton stated his intention that his Administration will support the efforts of American shipyards to transition from a military to a commercial business base. Foremost in his plan is to ensure fair

international competition. This industry is barred from international competition by a pervasive foreign shipyard subsidy system. To allow access to the NOAA program to these foreign yards before their nations reform their extensive subsidy practices is not only foolhardy but flies in the face of the President's efforts to help this industry help itself.

Of deep concern to us is the fact that under the economic model adopted by NOAA, a part of their eventual Fleet could be ships constructed in foreign shipyards and manned by foreign crews. Charter or lease of foreign built and/or foreign crewed ships is entirely possible if such a solution is indicated by the NOAA economic model. It would be disastrous for this industry if the future NOAA business was exported overseas.

Mr. Chairman, this program, when it finally gets underway, offers not only the ability to provide the nation with a needed seagoing scientific fleet, but also to assist in the survival and rebirth of one of our oldest and most important industrial capabilities. We urge you to continue your efforts to get the program underway and pledge our support as it is needed.

Thank you again for allowing me to appear before you today.

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October 1993

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November 1, 1993

Dear Mr. Chairman:

Thank you very much for the opportunity to appear before your subcommittee on October 21, 1993 to testify on the modernization of the scientific fleet of the National Oceanic and Atmospheric Administration (NOAA).

One point that did not come up in the hearing, which I would like to recommend for your consideration, is the permanent application of "Buy American" language for procurements executed under the NOAA Modernization Act (PL 103-567). For the last two years (FY 1993 and FY 1994), ad hoc language has restricted the annual expenditures of funds to U.S. sources. The employees of U.S. shipyards appreciate this consideration but are concerned that once the $1.9 billion modernization program begins to function, the highly subsidized foreign shipyards and chartering organizations will be able to underbid non-subsidized U.S. shipyards and operators, and force further export of U.S. shipbuilding and maritime jobs.

As my testimony noted, President Clinton has stated his full support for U.S. shipbuilding and its supplier industries. While we ask for no subsidies, we do respectfully request that the subsidy test already enacted in PL 103-567 (codified as 33 USCS 891e) be modified to exclude foreign participation in the NOAA modernization program until such time as the President of the United States officially advises the Congress that no unfair competition exists in the shipbuilding, leasing or chartering markets worldwide.

Our industry is in a fragile transition with hundreds of thousands of jobs at stake. The NOAA modernization program is a critical element in this transition and the jobs which NOAA portends are critical to our industry's survival. Therefore, given the failure of years of good faith subsidy negotiations within the OECD framework, and the lack of final action on the Gibbons Bill (H.R. 1402), we urge your committee to enact permanent "Buy American" language for NOAA.

President Clinton has stated his desire for a vibrant, competitive shipbuilding industry in this country. We urge your committee's support in this vital effort.

Please let me know if the Shipbuilders Council of America can provide any additional information to your committee which will assist you in proceeding to this goal.

Sincerely,

John J. Stocker
President

The Honorable Solomon P. Ortiz, Chairman
Subcommittee on Oceanography, Gulf of Mexico and the Outer Continental Shelf
U.S. House of Representatives
Washington, DC 20515-6230

TESTIMONY OF

THOMAS S. CHANCE

PRESIDENT, C & C TECHNOLOGIES, INC.

BEFORE THE

COMMITTEE ON MERCHANT MARINE & FISHERIES

SUBCOMMITTEE ON OCEANOGRAPHY, GULF OF MEXICO,

AND THE OUTER CONTINENTAL SHELF

U. S. HOUSE OF REPRESENTATIVES

WASHINGTON, DC

OCTOBER 21, 1993

Mr. Chairman and Members of the Subcommittee:

My name is Thomas Chance and I am President of C & C Technologies, Inc. of Lafayette, Louisiana. I am accompanied by my brother, Jimmy Chance, who is the Vice-President of our company. Because the subcommittee is probably not familiar with our qualifications regarding this testimony, I will briefly describe our backgrounds.

I am the former Senior Vice-President of one of the largest offshore surveying companies in the world employing more than 400 people. I currently have more than twelve years experience in the offshore surveying industry using state-of-the-art technology. I have a Masters of Science in Engineering (specializing in Geodetic Surveying) and a Masters in Industrial Administration. Jimmy is the former Manager of Survey Boats, Inc. where he was responsible for a fleet of 15 offshore survey vessels and some 120 operating personnel. He has supervised the design and construction of five survey vessels for private industry.

C & C Technologies, Inc. was established about one year ago, in part, to support the marine surveying efforts of NOAA by providing nautical charting and other services. We saw the possibility of providing survey services to NOAA as a major opportunity for two reasons: first, NOAA was quickly losing it's fleet, and second, the nation's charts had become grossly inadequate, and in some cases dangerous.

Jimmy and I have gotten to know several people in NOAA and are familiar with NOAA's Nautical Charting and Mapping Programs, and have followed the Fleet Replacement and Modernization Program for several years. With regard to the topics of interest, I can make the following observations:

First of all, let there be no doubt that NOAA is an incredible group of highly qualified professionals. I am continually impressed by the exceptional competence and diligence of the NOAA leadership throughout the civilian as well as NOAA Corps ranks. These are enthusiastic individuals working under a very difficult situation and the American people should recognize them for their tireless efforts.

Secondly, NOAA does not have the fleet capability it once had. Most of NOAA's vessels are 25 to 35 years old. For vessels of this general class, 30 years is analogous to a car with 175,000 miles; most of your money and time are spent keeping them going. Add to this the downtime costs while crews are standing by, and it becomes apparent that this is not a viable option from an economic or operational standpoint. In addition to the deterioration due to excessive age, the fleet is functionally obsolete for many of the marine projects that are required.

Thirdly, NOAA has a massive backlog of marine responsibilities whose environmental and economic impact are tremendous. Most of the water depth data shown on NOAA's nautical

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charts was collected over 50 years ago. Surveys over 100 years old are not uncommon. As a result, only a fraction of the surveys NOAA is using for chart production meet international standards, except through grandfathering. These older surveys were performed to support ship traffic with significantly less draft than is seen today. Due to a lack of technology, depth measurements were often thousands of feet apart which left the area between the soundings "uncharted". Thus boulders and pinnacles between soundings remain uncharted to this day. Further, surveyors often did not know their exact position when taking water depths so hazards are sometimes plotted in the wrong place. Finally, the seafloor has changed dramatically due to coastal erosion, shoaling, dumping of dredge spoils and other waste, sunken buoys and shipping containers, oilfield debris, and hundreds of uncharted wrecks and scuttled vessels.

The Queen Elizabeth II accident demonstrates one of the problems with the existing charts. This accident may have been avoided if reliable high density water depth data had been available. Fortunately, the environmental and economic damage as a result of this accident was not as great as it could have been, not to mention the hundreds of lives which could have been endangered.

Less obvious is the loss of use of coastal resources to fishermen, recreational boaters, and shippers due to the fear of entering areas with questionable charts.

With the introduction of the Global Positioning System (GPS) and electronic chart systems (computers showing the vessel on a nautical chart), NOAA chart data is being increasingly relied upon. Zoom features on electronic charts allow boaters to use data beyond its anticipated accuracy. Water depths and shore lines are now being taken at face value.

I am pleased to see the support for contracting for services as expressed by many within Congress, NOAA, the Academy of Sciences, the National Ocean Industries Association, the private sector, and by the present administration. The privatization of work which was once performed solely by the government is a movement which is taking place around the world. It stimulates private sector investment, faster job growth, and more efficient operations.

I believe that a partnership between NOAA and the private sector, is the best and most cost effective solution for this difficult problem. NOAA should have capability in areas where private industry will lack or where competitive forces may not develop.

NOAA and others have recognized several advantages to contracting for marine services. The following is a list of some of the advantages of this "partnering" relationship.

1) Partnering Minimizes the Federal Capital Outlay Required: Performing operations with the assistance of contract vessels and personnel minimizes the required federal capital outlays as compared to a government fleet construction and staffing

program. Contracting opportunities will drive the private sector to meet the needs of NOAA by building appropriate vessels, but with private capital.

2) Partnering Will Introduce Competition: Private sector marine survey companies, like other private sector companies, are driven by market forces to provide the highest quality, lowest cost surveys. These market drivers would not be available to a government owned and operated fleet.

3) Partnering can Provide the Most Appropriate Technology: Partnering gives NOAA the ability to utilize the most appropriate technology for each project. Furthermore, NOAA would not have to bear the extra costs of a vessel with excess capacity and capability.

4) Partnering Avoids Government Ownership of Obsolete Equipment: Partnering will allow NOAA to utilize the latest, most cost effective vessels and technology available. On the other hand, if NOAA were to purchase these assets as it has done in the past, they will soon find themselves saddled with antiquated and relatively inefficient equipment. Note that they are currently saddled with this situation.

5) Partnering Allows for Flexibility in Future Budgets: If budgets are substantially changed, the number of new contracts issued can be increased or decreased accordingly.

6) Partnering Can Provide High Quality Data at Reasonable Costs: This has been demonstrated by the U.S. Army Corps of Engineers and the U.S. Navy. In the private sector, offshore oil companies and marine telecommunications companies have been cost effectively contracting for marine surveys and ocean investigations for more than 30 years. The hydrographic surveying industry has provided marine surveys and studies for dredging companies, ports, and harbors world wide.

7) Partnering is the Quickest Method to get NOAA Operating: Partnering for hydrographic surveys to update nautical charts is the quickest and least expensive method of acquiring accurate water depth data in and around the United States.

8) Partnering Encourages Private Sector Investment and stimulates job growth: Partnering will stimulate private sector investment. Job growth in shipbuilding, electronics, computer systems, and surveying will be stimulated by competitors trying to achieve an advantage.

9) Partnering will Provide a Springboard to International Markets: Partnering, if done with U.S. companies, will give U.S. industries the opportunity to compete in the international marketplace by providing a basis from which it can expand. Partnering will give the private sector the opportunity to build the additional infrastructure necessary to compete in similar developing markets abroad.

10) The Private Sector is Willing to Invest in Equipment to Support NOAA: NOAA historically has not contracted out for marine services. However, the private sector does contain significant capability and will quickly supplement this capability if it is confident that NOAA is serious about contracting for the long term.

The use of the private sector to perform survey operations should benefit NOAA and the private sector, and improve our nation's charts, the use of our coastal resources, and the safety of navigation. The ability to contract out is dependent, as are all government operations, on funding by Congress. To date, NOAA has not had funds to contract out surveys.

The range of fleet costs given in NOAA's Fleet Study is approximately two to three times the cost we would use in private industry to build for the same mission. The reason for this price difference is partially, but not entirely, due to vessels specifications that are more complex than necessary.

I am not familiar with the National Performance Reviews' recommendation to create public and private competition for the NOAA fleet. However, I will say that the private sector has never been able to compete with a subsidized government or academic institution. One of the major reasons this is true is that the government research vessels are usually paid for by the government entity, the National Science Foundation, or through some other grant. Thus, true costs are not reflected. When government vessels are bid on jobs, the bid usually does not

include depreciation (thus repayment) costs. If private industry was equally subsidized, their costs would be about half of what they are. Any contractor would be eager to compete for NOAA's work if the subsidized competitors (NOAA, UNOLS, etc.) would include all of their real costs (including subsidies) as industry must do to survive.

ANSWERS TO WRITTEN QUESTIONS

AND ADDITIONAL TESTIMONY OF

THOMAS S. CHANCE

PRESIDENT, C & C TECHNOLOGIES, INC.

BEFORE THE

COMMITTEE ON MERCHANT MARINE & FISHERIES

SUBCOMMITTEE ON OCEANOGRAPHY, GULF OF MEXICO,

AND THE OUTER CONTINENTAL SHELF

U. S. HOUSE OF REPRESENTATIVES

WASHINGTON, DC

OCTOBER 21, 1993

1) I understand that there is an issue of liability when contracting for hydrographic services. How do you plan to work this out with NOAA?

NOAA has been liable for their work in the past and NOAA will be liable for their work in the future regardless if they do the work in-house or contract out. There are many things NOAA can do to minimize the liability they have. The most effective thing they can do is to update their charts as quickly as possible. Secondly, when they contract for hydrographic services, they should request more modern survey equipment which is much more effective and select the contractor based on the company's technical qualifications and then negotiate price as the U.S. Army Corps of Engineers does. Thirdly, until they are comfortable with a contractor, they may want to keep a NOAA representative on board to oversee the operations.

Our company has state-of-the-art hydrographic survey equipment, experienced personnel, and we would welcome a NOAA representative on each of our NOAA contracted vessels to oversee the operations. We have discussed this issue with NOAA on numerous occasions and they have indicated at various levels that they would be comfortable with a NOAA representative on board each contracted vessel.

2) Has your company had contracts from other Federal agencies for charting? How was the liability issue addressed in these contracts?

C & C Technologies recently completed a series of charting surveys for the U.S. Army Corps of Engineers on the Mississippi River and several of its tributaries. Personnel from C & C Technologies have performed charting work for federal agencies on inland rivers, lakes, bays, harbors, near shore coastal, and offshore areas for many years. The U.S. Army Corps of Engineers contracts for inland and offshore surveys continuously and does not have a problem with the liability of contractor performed surveys. They select their contractors based on technical qualifications (Brooks Act) instead of lowest bid which helps to assure quality work.

The Corps of Engineers is responsible for inland waterway charting which is generally shallower and more dangerous than the deeper offshore areas for which NOAA is responsible. Thus, while the inland waters have potentially greater liability, most of this charting work is contracted out and it is rare that a Corps of Engineers representative is on-board the contractor's vessel.

(For more information on the Corps of Engineers view of contracting and liability the reader could contact Mr. Bill Bergen of the U.S. Army Corps of Engineers Headquarters (202-272-1553)).

3) Can you give us an estimate of the number of days at sea that your company has available for contracting to NOAA? Are there other companies that have similar capability and have time available?

Our company can provide approximately 2000 days-at-sea per year for comparable hydrographic surveying services using technology similar to NOAA's, given 60 days notice. Regarding state-of-the-art technology, we can currently provide 250 days-at-sea per year and given eight months notice, can provide approximately 2000 days-at-sea per year. However, because of the magnitude of the investment, we must have a viable opportunity before we could make such an investment. And like any other customer, if we could not perform satisfactorily, NOAA would have the right to remove us from the job.

There are approximately 20 companies in the United States that perform the type of hydrographic surveys NOAA is currently performing. These companies could probably provide in excess of 10,000 days-at-sea per year. There are at least four companies which could currently offer technology more advanced than NOAA's.

4) If NOAA were to contract your company for charting services, would you need to build ships to do it?

Shipbuilding would depend on the volume and stability of work contracted by NOAA. If the work is substantial, purpose built ships will be necessary to remain competitive. Our company, like many others, stands ready to invest if we are confident that NOAA will be contracting for services for years to come. In other words, if NOAA was to become very serious about contracting, and we would build custom vessels to perform this work. This position is demonstrated by the fact that our company has gone as far as building two state-of-the-art survey launches on the hunch that NOAA may begin to contract for surveys.

Similarly, if we felt that NOAA would only contract a small amount of the work, or that they are not committed to contracting for the long term, we would only modify existing vessels.

The reader should also understand that, given Fleet Plan vessel estimates, the private sector could probably build and equip twice the number of vessels with the same budget. For example, for a Near Shore / Estuarine state-of-the-art Charting vessel, it would be difficult to spend more than six million dollars. Rumored Fleet Plan estimates are three times this amount.

5) As a general rule, which types of vessels are most readily available for chartering (small, medium, large) ?

There are hundreds of small (90 to 120 foot) work type vessels usually with dozens available in the United States for lease at any one time. There are also more than one hundred medium to large work type vessels (150 to 250 feet) with a dozen or so available in the United States at any one time.

NOAA Fleet Replacement and Modernization Program Plan

November 1993

Under Secretary for Oceans and Atmosphere

NOAA

Fleet Replacement and Modernization Program Plan

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Dr. Nancy Foster,
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Office of Oceanic and Atmospheric Research

RADM Sigmund R. Petersen
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Robert M. Valone,
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FLEET REPLACEMENT AND MODERNIZATION PROGRAM
EXECUTIVE SUMMARY

The National Oceanic and Atmospheric Administration (NOAA) has developed the Fleet Replacement and Modernization (FRAM) Program Plan for updating and eventually replacing the ships in NOAA's fleet. Deteriorating material condition of the fleet caused by age and obsolete equipment is affecting NOAA's ability to collect the data and information required by Congressionally directed programs and national and international obligations. The decline of NOAA's fleet is occurring at a time when increasing demands are being placed on the agency by new legislation and expanded ocean programs. NOAA's fleet of ships are used by NOAA's National Marine Fisheries Service, National Ocean Service, and the Oceanic and Atmospheric Research Laboratories to gather scientific data vital to the environmental health and well being of the nation. These data are used to manage fisheries stocks, allow for safe maritime commerce, and predict short and long-term climate changes. Ships which are appropriately designed, equipped, and outfitted are critical to providing the observations, detailed studies, and information required to accomplish these missions. Implementation of this program is a critical part of the NOAA Strategic Plan.

In 1990, a three part Ocean Fleet Modernization Study was conducted by a team of government, industry and university personnel. The results of that study indicated that NOAA should formulate an overall long-term plan to replace and modernize its fleet. The initial version of that plan was ready in March of 1991 and was subsequently updated in September of 1991. The Department of Commerce approved the program and supported NOAA's FY 1993 budget request of $32.2 million. Congress appropriated $33.2 million in FY 1992 to accelerate the program. In consideration of this, the President's FY 1993 budget request was submitted at $2.0 million. However, Congress appropriated $30.0 million for FY 1993. Congress also passed the NOAA Authorization Act of 1992 which included a 15 year authorization for the FRAM Program. This updated version of the FRAM Program Plan reflects the NOAA program requirements and decisions reached by NOAA as part of the FY 1995 budget process.

NOAA's fleet collects data for NOAA's basic mission requirements in response to both legislatively mandated programs and international commitments. For the 1990 study, each of the principal users of ship time analyzed their needs for ship days at sea (DAS) to meet scientific requirements. The requirements include

the impact of many recent legislative actions which have increased the demand for ship time. A condensed list of recent actions includes the Global Change Research Act; the Oil Pollution Act; The Magnuson Fishery Conservation and Management Act; the Drift Net Act, and the Clean Water Act. These DAS requirements were related to various sizes of ships and their performance, from small near shore ships to high endurance deep ocean research ships. The total need established by this analysis was 77,910 long-term and centrally managed and funded DAS. After an internal review, NOAA reduced the requirement to 6,686 DAS. As a result of the fiscal constraints imposed by the Omnibus Budget Reconciliation Act of 1990 and other considerations, a 5,000 DAS program was approved by the Department of Commerce in 1991. The recent 1993 evaluation of NOAA's mission needs was used to update the FRAM Plan. This 15 year plan builds to a currently estimated need of 5,760 DAS.

The FRAM Program Plan reflects the FY 1994 Appropriation of an oceanographic research ship. However, the impact of adding this ship in FY 1994 and other Congressional Appropriation Conference language on FY 1995 and subsequent years has not been determined and is currently being evaluated.

The FRAM Program Plan will be revised on an annual basis as requirements, alternatives, budgets, and other opportunities or constraints evolve. Each line organization within NOAA (the National Marine Fisheries Service, the National Ocean Service, and the Office of Ocean and Atmospheric Research) will continue to evaluate their requirements and alternatives for meeting them. During the coming year, the National Ocean Service will review the composition of the class mix of the fleet to accomplish their missions, evaluate the role of contracted survey services, and assess the potential impact of new technologies (e.g., airborne lidar) on the fleet.

Translation of the 5,760 DAS portion of the plan into ships yields requirements for up to 18 new ships to be acquired over the next 15 years and up to six conversions. Spreading the program over several years allows for affordability in each budget year and eliminates the block obsolescence problem NOAA currently faces caused by a majority of its 1960's fleet of ships reaching the end of their useful life at the same time. In order to allow time to define and acquire the new ships, critical and routine maintenance will be continued on the existing fleet and more extensive Repair to Extend (RTE) efforts will be conducted on eight of the existing ships. Repair to extend is not intended to be a complete rehabilitation of these ships, rather only those necessary repairs and upgrades to permit the ships to perform

their mission effectively until a replacement ship is operational, usually an eight to 10 year period.

An economic analysis will be performed for each new construction ship type to determine whether it is more advantageous for NOAA to own or lease the new asset. This economic analysis model has been developed with inputs from industry. The model has been validated and verified by an independent firm.

As ship requirements are finalized, the ship design and ship-building industry will become very active in this program. The industry is currently being kept informed through open industry briefings. Ship designs, specifications and charter requirements will be provided to industry for review and comment. This will allow the industry to identify areas where they believe NOAA's requirements or specifications are overly burdensome or costly, thus keeping the ships as affordable as possible while meeting NOAA's needs.

NOAA is also looking at existing relatively new ships that could be converted to meet its mission needs. NOAA plans to convert a surplus Navy T-AGOS into a NOAA charting and mapping ship. Converting this ship replaces one RTE and the construction of a new ship. During the coming year, there will also be an assessment of the suitability of retrofitting the present charting survey launches with modern equipment. The total FRAM Program Plan includes conversion of up to six T-AGOS ships. The suitability of one of these proposed conversions for research purposes will be carefully reviewed in the next year. NOAA also has an option on a Navy contract to buy one AGOR 23 Class ship. This ship meets a NOAA medium endurance oceanographic research ship requirement. Combining this purchase with a Navy procurement of similar ships reduces design costs and allows NOAA to benefit from lower acquisition costs due to multiple ship production.

Chartering is one of the approaches that will be used to meet mission requirements. The present practice of meeting unique or variable DAS requirements through chartering will continue. Charter will also be used to meet some backfill requirements, where possible, when NOAA ships are out of service. Approaches which will be assessed through the economic model to meet long-term DAS needs include charter. Additional information on charter to be used in the decision process to meet long-term needs will be collected through a National Performance Review initiative.

Attachment 1 shows the first 15 years of the FRAM schedule, including the RTEs which occur in the early years.

Requirements and specifications will be fully commercial, meeting U.S. Coast Guard and American Bureau of Shipping Standards. Each replacement ship requirement will be analyzed to determine whether to build to own, convert an existing ship, or charter the required asset. Ultimately, the contracts for ship detail design, construction, conversion, lease or other alternatives will be openly competed, thus obtaining ships that meet NOAA's needs at the lowest realistic cost.

This FRAM capital investment program will contribute to the health and well being of the Nation by providing the data collection platforms to meet critical program requirements. Significant benefits include:

- Building sustainable marine fisheries;

- Restoring threatened and endangered marine mammals, sea turtles and other species;

- Preventing loss of life, cargo, and other property and environmental damage from ship groundings;

- Improving productivity and safety of maritime commerce;

- Improving management of coastal and ocean resources through up-to-date scientific data;

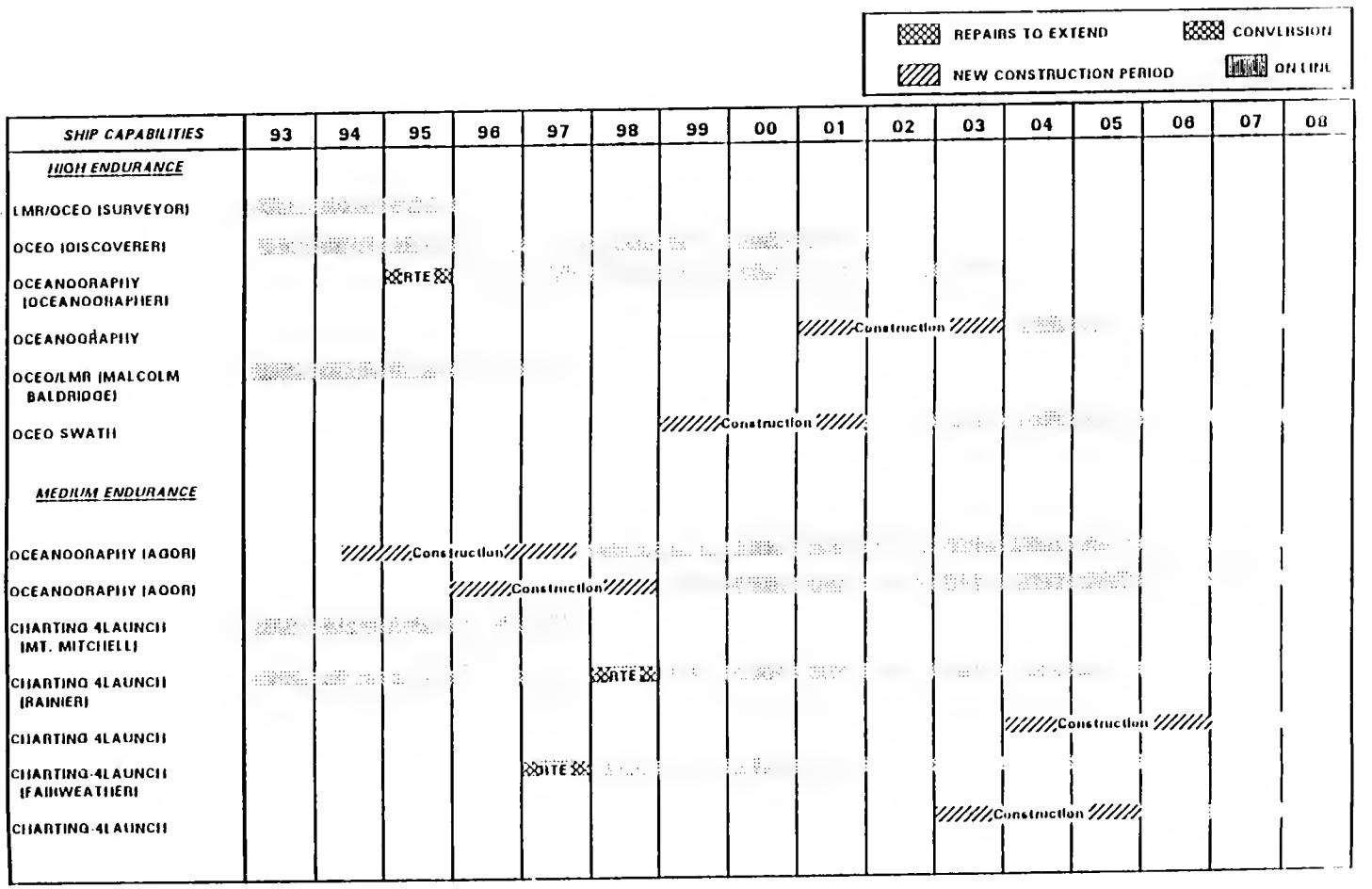
- Improving response capability for spills of oil and hazardous materials in ports, harbors and coastal waters by providing reliable data on the physical marine environment;

- Providing seasonal and interannual forecasts of temperature, precipitation and droughts; and

- Providing decadal to very long-term climate predictions and assessments for crucial policy and economic planning decisions.

In addition, this program will provide shipyard jobs and help maintain the U.S. shipbuilding industrial base.

OMB SUBMISSION
NOAA FLEET REPLACEMENT AND MODERNIZATION
5,760 DAYS-AT-SEA



Attachment 1

OMB SUBMISSION
NOAA FLEET REPLACEMENT AND MODERNIZATION
5,760 DAYS-AT-SEA
(continued)

SHIP CAPABILITIES	93	94	95	96	97	98	99	00	01	02	03	04	05	06	07	08
MEDIUM ENDURANCE (CONT.)																
LMR (MILLER FREEMAN)					RTE											
LMR												Construction				
LMR (ALBATROSS)																
LMR						Construction										
LMR (TOWNSEND CROMWELL)																
LMR								Construction								
LMR (OREGON II)																
LMR									Construction							
LMR (D. S. JORDAN)						RATE										
LMR									Construction							
LMR (DELAWARE)			RTE													
LMR											Construction					
LMR											Construction					
LMR												Construction				

OMB SUBMISSION
NOAA FLEET REPLACEMENT AND MODERNIZATION
5,760 DAYS-AT-SEA
(continued)

SHIP CAPABILITIES	93	94	95	96	97	98	99	00	01	02	03	04	05	06	07	08
T-AGOS CONVERSION																
OCEANOGRAPHY (TAO Array)		CONV														
OCEO/LMR					CONV											
CHARTING 4LAUNCH			CONV													
CHARTING 4LAUNCH				CONV												
CHARTING-4LAUNCH					CONV											
CHARTING-4LAUNCH						CONV										
COASTAL/LOW ENDURANCE																
CHARTING-2 LAUNCH (WHITING)																
LMR (CHAPMAN)						RTE										
LMR													Construction			
LMR (JOHN COBB)																
LMR			Construction													
LMR					Construction											
OCEO/LMR (MCARTHUR)																
NEARSHORE/ESTUARINE																
CHARTING (RUDE)																
CHARTING				Construction												
OCEANOGRAPHY (FERREL)					RTE											
OCEANOGRAPHY														Construction		
CHARTING (HECK)																

Fleet Replacement and
Modernization Program Plan

Part I - Program Background and Rationale

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- 1.2 Ocean Fleet Modernization Study
- 1.3 The FRAM Program Plan

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- 2.2 Recover protected species
- 2.3 Restore coastal ecosystems health
- 2.4 Modernize navigation and positioning systems
- 2.5 Implement seasonal to interannual climate forecast
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- 2.7 Support by program
- 2.8 Small Craft
- 2.9 Fleet mix and size

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- 6.4 FY 1994 plans
- 6.5 FY 1995 details
- 6.6 FY 1996 and beyond

1.0 Introduction

1.1 Background

NOAA has unique responsibilities to improve understanding of the coastal and global oceans through research, assessment, surveying, and long-term time series monitoring. To accomplish its ocean missions, NOAA's efforts focus upon three major activities: assessment of living marine resources, mapping and charting, and oceanographic research and monitoring. Each of these have unique mission requirements that can only be accomplished on ships configured to provide the necessary end products in an efficient manner. Ships which are appropriately designed, equipped and outfitted are critical to providing the observations, detailed studies, and scientific information required to accomplish NOAA's mission.

The present NOAA fleet of 23 ships, with the exception of three recently transferred Navy T-AGOS ships, has problems meeting these obligations because of age and functional obsolescence. Coupled with these problems are a backlog of deferred maintenance requirements caused by limited funding, and reduced Days at Sea (DAS) caused by unreliable major shipboard systems. Days at sea are defined by NOAA as days when a ship is at sea conducting mission operations or in transit to and from operating areas. If the current level of maintenance continues, ship DAS available to support all three major activities will diminish, and NOAA will have essentially no serviceable ships to support its programs by the year 2000. Figure 1 shows the number of ships in service with and without implementation of the FRAM Program. It also shows the number of DAS provided with and without implementation of the FRAM program. If the FRAM Program is not implemented, there will be essentially no NOAA fleet by the year 2000. NOAA would be unable to perform many of its current missions that require data collection by ships.

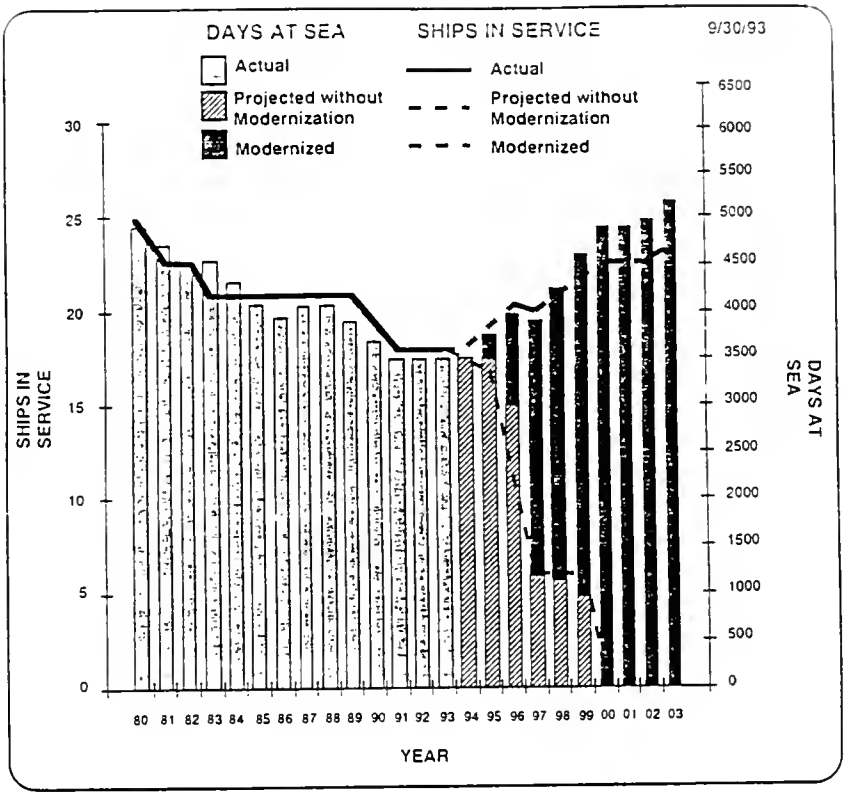

Figure 1

1.2 Ocean Fleet Modernization Study

In January 1990, NOAA began an assessment of its ocean mission requirements and the identification of the survey and research fleet that would be required to support current and projected programs. The study was divided into three distinct phases, with subsequent phases building on the results of the previous phases. Phase I of the study identified the mission and ship requirements from the user viewpoint; Phase II developed identifiable hull and instrumentation characteristics necessary to meet these requirements; and Phase III examined these characteristics and determined long-term strategies for carrying out fleet replacement and modernization.

Three separate working groups composed of leading scientists, engineers, and program managers from both within and outside of NOAA conducted the study. The study concluded what many in the oceanographic community suspected, that the NOAA fleet now faces major problems in supporting its mission due to age, decreasing reliability because of a critical backlog of deferred

maintenance, and in some instances, inadequate functional capability. A series of options were developed for the fleet replacement and modernization.

The Recommendations of the Ocean Fleet Modernization Study are shown in Table 1.

OCEAN FLEET MODERNIZATION STUDY RECOMMENDATIONS
PHASE III

Fleet Modernization should be an urgent, NOAA-wide priority.
NOAA should propose a long-term, cost-effective fleet capitalization strategy beginning in FY 1993.
NOAA should establish a clear and objective methodology to help in the analysis of trade-offs between new ship performance and cost, taking into account life-cycle, cost-estimating techniques.
Depending upon program priority and budget availability decisions by policymakers in future years, the fleet capitalization strategies that should be initially given the most favorable consideration are in the range of 22 to 33 ships.
NOAA should establish a fleet modernization program office to perform strategic planning and technical analysis to support policy decision-making by NOAA, DOC, OMB, and the Congress.
NOAA should seek and maintain maximum cooperation with other ship operators in this country and abroad to respond most cost-effectively to the urgent marine and atmospheric problems on the national agenda.
NOAA should aspire to be a model manager and operator of an oceanographic fleet both at home and abroad.

Table 1

1.3 Fleet Replacement and Modernization (FRAM) Program Plan

This document contains the overall approach to solving the problem of NOAA's declining fleet assets identified in the Ocean Fleet Modernization Study. The primary users of NOAA ships projected their long-term requirements for types of ships and needed DAS. Based upon these requirements, NOAA prepared an initial plan in March of 1991 that identified the ship size and capability mix and projected the costs for the new fleet which would satisfy NOAA's required ship DAS. This plan was subsequently revised in September of 1991 after review by the Department. Integral to making this replacement of the fleet possible, while still providing adequate ship time during the next decade, the revised plan included critical maintenance, repair to extend (RTE) the service lives for some NOAA ships, and the acquisition of 20 new ships. RTE's extend the service life of a ship approximately eight to 10 years, providing enough time to build, convert, lease, or charter

the appropriate replacement ship. Each modernized ship will remain in service until the delivery of its replacement, and then it will be retired.

This basic approach and the revised plan were approved during the FY 1993 budget process. Commerce initially requested $32.2 million to start this program in FY 1993. However, Congress accelerated the time frame by appropriating $33.2 million in FY 1992. Congress also appropriated $30.0 million for FY 1993 and at the same time authorized a 15 year FRAM Program in the NOAA Authorization Act of 1992.

With the change in Administration, NOAA's mission needs have been reviewed. The review identified long-term essential NOAA mission requirements. The 15 year FRAM Program described in this plan builds to a level of 5,760 DAS per year to meet these mission requirements. These long-term DAS will be centrally managed and funded. In addition to the long-term needs, NOAA has short- and medium-term and unique DAS needs which are more variable. These needs, recently about 1,300 DAS per year, are presently met through chartering by individual NOAA programs. This approach to meet short- and medium-term, unique and more variable needs will continue. The FRAM Program, to meet long-term needs, currently includes routine and critical maintenance, RTE of eight existing ships, conversion of up to six surplus Navy T-AGOS ships, the construction, lease, or charter of up to 18 new ships and the construction of some small boats. The suitability of one of the proposed T-AGOS conversions for research purposes will be carefully reviewed in the coming year. There will also be an assessment of the suitability of retrofitting the present survey launches with modern equipment in the next year. The FRAM Program is essential to NOAA performing its mission.

The FRAM Program Plan reflects the FY 1994 Appropriation of an oceanographic research ship. However, the impact of adding this ship in FY 1994 and other Congressional Appropriation Conference language on FY 1995 and subsequent years has not been determined and is currently being evaluated.

The FRAM Program Plan will be revised on an annual basis as requirements, alternatives, budgets, and other opportunities or constraints evolve. Each line organization within NOAA (the National Marine Fisheries Service, the National Ocean Service, and the Office of Ocean and Atmospheric Research) will continue to evaluate their requirements and alternatives for meeting them. During the coming year, the National Ocean Service will review the composition of the class mix of the fleet to accomplish their missions, evaluate the role of contracted survey services, and assess the potential impact of new technologies (e.g., airborne lidar) on the fleet.

2.0 Policy Basis for the Program

The replacement and modernization of NOAA's fleet directly supports NOAA's fisheries, charting, and ocean and atmosphere monitoring and prediction programs, which significantly contribute to the Administration and DOC's goal of economic growth while achieving sound environmental stewardship. The modernization of the NOAA fleet will:

- Enhance scientific data collection used to achieve sound environmental assessment, prediction, and stewardship;

- Stimulate the economy in terms of the U.S. shipbuilding industrial base;

NOAA has the primary responsibility for vital marine programs. The mission of NOAA is to promote global environmental stewardship and to describe and predict changes in the Earth's environment. To accomplish this mission, NOAA has developed a strategic plan which includes several major actions to enhance ongoing programs and which is heavily dependent upon data collected by ships. These actions include:

- Build Sustainable Fisheries

- Recover Protected Species

- Restore Coastal Ecosystems Health

- Modernize Navigation and Positioning Systems

- Implement Seasonal to Interannual Climate Forecasts

- Predict and Assess Decadal-to-Centennial Change

2.1 Build Sustainable Fisheries

NOAA's fisheries research ships support living marine resource assessment and research. NOAA is the Nation's only agency with specific statutory authority (Magnuson Fishery Conservation and Management Act) to conserve and manage the fishery resources (including highly migratory species) found off the coasts of the United States. Billions of dollars in potential economic growth,

hundreds of thousands of new jobs, countless recreational fishing opportunities, and potential reductions in the Nation's $3.4 billion trade deficit in fishery products are being wasted as a result of over-fishing and over-capitalization. Many fishery stocks have been so severely over-fished that their future viability is jeopardized. Still other stocks go under-utilized, which also wastes potential economic opportunities. The National Marine Fisheries Service (NMFS) 1992 report, Our Living Oceans: Status of U.S. Living Marine Resources, indicates that of 156 assessed fishery resources, 43 percent are over-utilized and 18 percent are under-utilized. More disturbingly, the report indicates that there is insufficient data to assess the status of 34 percent of all other U.S. marine fishery resources. Clearly the Nation cannot maximize its potential economic benefit unless this information is collected and synthesized.

In this regard, state-of-the-art fisheries research ships from NOAA's modernized fleet will better support federal living marine resource assessments and field research activities in U.S. coastal waters and in more remote areas of the world's oceans (e.g., Western Pacific, Arctic and Antarctic Oceans). Surveys, independent of ongoing commercial or recreational fishing, provide much of the needed sampling and biological data required by NMFS fishery assessment scientists. These data include the enumeration of all species captured by weight and number (regardless of commercial value or significance), size and length samples, age-structure collections, stomach and tissue samples, and in situ environmental observations. These data are then entered into mathematical models which generate estimates of population abundance and size-age structure. Based on these results, NMFS scientists provide near-term forecasts and recommended harvest levels for consideration by responsible fishery managers or councils.

NOAA estimates that nine fishery research vessels of varying endurance and capability are required to provide at-sea support for a wide range of fishery survey operations. These operations include, but are not limited to, all types of commercial fishing and scientific operations (bottom and mid-water trawls, long-lining, and pot operations), egg and larval surveys (ichthyoplankton net sampling), bottom grabs and beam trawl operations, hydroacoustic surveys, submersible and SCUBA operations, remote sensing (underwater, aerial, and satellite) coordinated operations, and real-time oceanographic/meteorological sampling.

2.2 Recover Protected Species

NOAA's fishery research ships are also needed to collect the data necessary to understand and protect populations of marine mammals and endangered species (e.g., sea turtles) as mandated by federal

law. Both the Marine Mammal Protection Act and the Endangered Species Act recognize that the severe decline of whales, small cetaceans, seals and sea turtles represents a significant loss, particularly to the biological and aesthetic dimensions of the country's marine ecosystems.

Four ships are required for NOAA's protected and endangered species research to support field activities such as fishery-independent surveys of marine mammal populations i.e., sea-surface line transects, tuna-dolphin interactions in the Pacific, and transport and support of remote field camps in both the Arctic and Antarctic (Steller sea lion enumeration and Pribilof Island northern fur seal research in Alaska; Antarctic cetacean, seal and seabird ecology research). In the area of recovery and restoration, fishery vessels are required to support Hawaiian monk seal rehabilitation, transiting to and collecting monk seal pups from Kure Atoll and Midway Island for NMFS's Honolulu, HI Laboratory head start program. Similarly, the endangered Kemp's Ridley sea turtle program at NMFS's Galveston, TX Laboratory requires vessels for its head start activities and for sea turtle tracking surveys. Ships are required for innovative gear experiments such as the successful development of turtle excluder devices (TEDs) now implemented throughout the U.S. shrimp fleet. In the eastern tropical Pacific, NOAA field research is required to develop changes in the fishing practices and gear used by the commercial tuna fleet. The dramatic declines in associated dolphin mortalities from U.S. tuna fisheries have been made possible largely through the at-sea field programs supported by vessels of the NOAA fleet.

2.3 Restore Coastal Ecosystems Health

As NOAA seeks to rebuild, re-focus, and integrate its coastal ecosystems management activities, scientific investigations will require properly equipped and outfitted ships. The "health" of the Nation's coastal ecosystems is declining and the long-term prognosis indicates an acceleration of the decline.

Coastal areas are heavily populated and coastal recreation and tourism are growing at impressive rates. This growth threatens environmental quality conditions. These coastal areas are also some of the most ecologically sensitive areas, providing important habitats for over 75% of the total U.S. commercial landings of fish and shellfish. Populations of virtually all estuarine and inshore species have been reduced to historically low levels of abundance by over fishing, habitat loss, and pollution. Effective coastal ecosystems management can significantly reduce the costs of maintaining water quality and help ensure a sustainable harvest of the sea's resources.

Much of the data to allow effective management must be collected at sea. The current status and future trends of coastal ecosystems health are determined, in part, by monitoring the concentrations of key contaminants in organisms, sediment and water in coastal and estuarine waters. This monitoring effort includes U.S. coastal waters from Maine to Texas and California to Alaska. Approximately one year of ship support is required annually to collect the necessary fish, sediment and water samples and related salinity and temperature versus depth data.

2.4 Modernize Navigation and Positioning Services

NOAA's mission requires survey ships for seafloor charting and mapping. Some areas of the U.S. coastline have never been surveyed. Moreover, areas that have been mapped are continuously changing due to the forces of nature and cultural development. A basic function of NOAA, deeply rooted in its history and written into law, is "to provide charts and related information for the safe navigation of marine and air commerce; and to provide basic data for engineering and scientific purposes and for other commercial and industrial needs" (33 U.S.C. 883). These products and services are even more vital today than they have been in the past. More than 98% of U.S. international commerce by weight, half of which is oil or hazardous materials, moves through the Nation's coastal waters guided by charts created with data that is over 50 years old. Transportation, defense, science, public works, and other aspects of our society depend on these services. NOAA is the only agency or organization in the country that gathers these data or responds to these needs in the U.S. and its surrounding waters.

Based on current technology seven survey ships, of various endurances and capabilities, are required to effectively and efficiently collect depth information, and locate and identify hazards to marine navigation in water depths ranging from two meters to 40 meters in harbors, harbor approaches, and coastal waters. These data are collected by various methods, such as hull mounted, multibeam sonar survey systems and towed side-scan sonar systems. Many of the survey areas are remote, e.g., Alaska, or require long transits from ports. NOAA requires survey ships of sufficient size and capability that can operate several survey launches, remain in the survey area for extended periods of time, and operate 24 hours per day to provide cost effective operations. In harbors, harbor approaches, and near shore coastal waters, smaller high-speed survey boats will provide efficient survey operations.

The analysis of new and emerging survey technologies to be conducted during FY 1994 and beyond may result in future modifications to the current FRAM survey ship requirements.

As part of the Administrator's National Performance Review, NOAA is assessing the feasibility or private sector involvement in surveying. In FY 1994, NOAA plans to issue a solicitation to private industry to collect some charting data. This solicitation and the resulting contract will be used to help determine private industry interest and capability and to assess industry costs.

2.5 Implement Seasonal to Interannual Climate Forecasts

Oceanographic research ships are needed to obtain the Agency's measurements to support its long-term time series ocean and atmosphere research mission. Seasonal to interannual climate forecasting is a specific NOAA mission. Predictions on the seasonal to multi-year time scale have increased substantially in accuracy in recent years. This improvement has been possible because of our knowledge of El Niño - Southern Oscillation (ENSO) events, a phenomenon whose influence was not understood until ten years ago. NOAA will capitalize on that knowledge, with the objective of making the assessments and forecasts needed to maintain the Nation's economic strength. Predictive capabilities are essential to NOAA's mission of environmental stewardship as well. Potential effects of climate change and variability may aggravate present environmental problems and add another dimension to their complexity. Through short-term climate prediction -- seasons to a few years -- NOAA seeks to reduce the disruption, economic losses and human suffering that occur in response to changes in the climatological mean annual cycle. Data collected by NOAA's oceanographic ships is vital to improved climate forecasting.

Progress in understanding and modeling seasonal to interannual climate variability requires adequate data on forcing functions (winds and surface fluxes) and improved data sets for diagnosing model performance and assimilation. This requires a real-time, long-term ocean observing system that can only be supported by oceanographic research ships. Shipboard profiling of both oceanic and atmospheric tracers and fluxes is also critical for major advances in understanding seasonal to interannual climate variability. Two ships are required to service the ocean observing systems and collect the oceanic and atmospheric tracer and flux data.

2.6 Predict and Assess Decadal-to-Centennial Change

Decadal-to-centennial changes have had and will continue to have enormous impacts on societies and governments, and they pose critical prediction and assessment needs for a world of increasing population, food requirements, and resulting societal stresses. In contrast to tomorrow's weather forecast, whose credibility is quickly tested, the predictions of changes that lie decades ahead are input to decisions that will likely have to be faced long before the predicted change can be unequivocally verified. This need is particularly acute for environmental changes that either cannot be reversed quickly (e.g., global warming from long-lived greenhouse gases) or that can occur quickly (e.g., those climatic changes seen in the paleoclimatic record in periods not too different from today). The keys to such credibility lie in the completeness and rigor of the research and its results. NOAA's oceanographic research vessels collect data and conduct research critical to these long-range prediction programs.

Assessing long-term global environmental change requires many of the same observations and data obtained for understanding climate on interannual time scales but additionally requires an understanding of processes occurring in the deep ocean. This is because of the necessity to include the ocean's vast heat capacity and its ability to take up large amounts of atmospheric carbon dioxide (a greenhouse gas) in models. Studies of ocean circulation and heat flux require transoceanic measurements of the deep ocean on a routine basis. A major tool in understanding such processes is the use of oceanic tracers. These species are not capable of routine monitoring by an in situ ocean observing system or by remote sensing technologies, each must be measured using shipborne oceanographic sensors and on board data processing systems. NOAA needs two to three high or medium endurance research platforms to fulfill its Climate and Global Change requirements. The time scales of deep ocean circulation are such that the measurements must be repeated over long periods of time, as is being done in the World Ocean Circulation Experiment.

2.7 Support By Program

The DAS support that the modernized fleet will provide to the programs described in NOAA's strategic plan is shown in table 2:

Program	DAS
Build Sustainable Fisheries	2,061
Recover Protected Species	667
Coastal Ecosystems Health	265
Modernize Navigation and Positioning Services	1,680
Implement Seasonal to Interannual Climate Forecasts	459
Predict and Assess Decadal-to-Centennial Change	628
Total	5,760

Table 2

2.8 Small Craft

Many of NOAA's small craft that support scientific missions of NOAA laboratories also need replacement. These small craft are used to conduct NOAA's oceanic studies and survey activities that are concentrated in the coastal regions of the United States. NOAA is also investigating more extensive utilization of small craft where it would be more cost effective. For missions where long transits, heavy gear, and elaborate equipment are not required, or for work in restricted and shallow waters, small craft can be more capable, more cost effective and are often preferable to a larger platform. Missions that can be conducted by NOAA small craft include: biological, chemical, and physical sampling in the Great Lakes; nautical charting of bays, harbors, approaches and coastal areas; and studies of nearshore fisheries such as lobsters, salmon, and species habitat destruction by pollutants.

2.9 Fleet Mix and Size

This 15 year plan, as currently devised, will build to a level of 5,760 DAS per year to meet the requirements of NOAA's three major users of ship time. In determining the number and mix of ships, the operating days, maintenance and repair periods, logistics support, and the seasonal and geographic mission requirements have been considered.

DAS are defined by NOAA as days when a ship is at sea conducting mission operations or in transit to and from operating areas. Some agencies use operating days, defined as days away from home port, rather than DAS for planning and accounting purposes.

Maximum annual operating DAS per ship are limited by the ship size and endurance, days required in port for maintenance and repair, logistics support, and adverse weather. Considering typical operating scenarios, a minimum of three to five days per month are required for logistics support. An average minimum of one month is required annually for maintenance of a new ship with extended periods for drydocking planned every three to four years. Under ideal conditions for maintenance, repair and logistic support, with no days lost to weather, and with no other constraints, the high and medium-endurance ships could operate up to a maximum of 300 DAS each per year. However, considerations due to seasonal and geographical mission requirements, ship capability requirements, and resulting ship design differences make this problematic. Because of the expense involved in constructing and equipping all ships to accomplish all missions the ships in the modernized fleet will not each be capable of accomplishing all missions. Some time is often required for refitting equipment or outfitting between different modes of operation between projects. Also, some missions must be accomplished during a certain season and most missions must be accomplished in a certain geographical area. For this plan, an average annual requirement of 20 days per year for weather and an annual average of 15 days due to seasonal and geographical mission requirements, ship capability requirements and retrofitting and outfitting were assumed. The coastal/low-endurance and nearshore estuary ships are further limited by endurance and range requiring more frequent port calls for refueling and resupplying.

These practical considerations lead to a proposed operating schedule of 240 DAS for new ships with some variation to accommodate fluctuations in conditions and schedules. The operating schedule for existing ships, if not already operating for at least 240 DAS, will be increased to 240 DAS as major repairs are completed.

The University-National Oceanographic Laboratory System (UNOLS) is a confederation of universities that operate oceanographic ships. As a point of reference the UNOLS members consider 275 operating days for their larger ships and 250 operating days for their small ships as optimum. The UNOLS operating day includes any day away from home port except for days scheduled for maintenance and often includes staging and destaging days in home port. NOAA's planned 240 DAS excludes days in port away from home port and excludes days in home port for staging and destaging. NOAA's 240 DAS is approximately equal to UNOLS 250 - 275 operating days. The average actual operating days for UNOLS ships over the past 8 years has been 200 operating days for small ships and 252 operating days for large ships.

Based on 240 DAS per ship, 24 ships will be required to meet the 5,760 DAS level. Table 3 provides a summary of ship requirements by mission area.

Ship Class	Oceanographic Research	LMR	Charting	Total
High Endurance	2.0	---	---	2.0
Medium Endurance	2.0	8.0	2.0	12.0
Coastal/ Low Endurance	0.5	3.5	4.0	8.0
Nearshore/ Estuarine	1.0	---	1.0	2.0
Totals	5.5	11.5	7.0	24.0

Table 3

3.0 Benefits to the Nation

The FRAM capital investment program will replace and modernize NOAA's fisheries, research, and charting fleet. This investment will contribute to the health and well being of the Nation by providing the data collection platforms necessary to meet critical program requirements. Significant benefits include:

- Building sustainable marine fisheries;

- Restoring threatened and endangered marine mammals, sea turtles and other species;

- Preventing loss of life, cargo, and other property and environmental damage from ship groundings;

- Improving productivity and safety of maritime commerce;

- Improving management of coastal and ocean resources through up-to-date scientific data;

- Improving response capability for spills of oil and hazardous materials in ports, harbors and coastal waters by providing reliable data on the physical marine environment;

- Providing seasonal and interannual forecasts of temperature, precipitation and droughts; and

- Providing decadal to very long-term climate predictions and assessments for crucial policy and economic planning decisions.

In addition, this long-term program will provide shipyard jobs and help maintain the U.S. shipbuilding industrial base.

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PART II - IMPLEMENTATION STRATEGY

4.0 Program Description

The goal of the FRAM Program is the eventual replacement of the aging fleet. The current Program Plan includes constructing, converting, chartering or otherwise acquiring up to 24 new ships for the NOAA fleet over the first 15 years. The procurement of these ships is spread over this time period for several reasons. Practically, it takes time to acquire a fleet of the magnitude and capability NOAA requires. There are also long-term benefits to NOAA in this approach. By procuring the new ships over several years, the ships will not all reach obsolescence at the same time. At the end of the first 15 year period, those ships that are government owned and were procured early in the program will be ready for mid-life upgrades. When the ships reach the end of their useful lives, usually 30 years, NOAA can replace ships more gradually, as necessary. This way NOAA can maintain a modern, up-to-date fleet to meet its changing mission needs well into the future. The program also includes the replacement of some small craft.

The program uses routine and critical maintenance and RTE to ensure that the existing fleet will satisfy the users' needs for DAS while new ship assets are being delivered to the fleet. Days at sea will also be provided by chartering, where possible, to backfill mission needs when an existing ship is out of service for an RTE. Some types of vessels, such as fisheries research ships, may not be readily available for charter.

For each new ship type, NOAA will conduct an economic analysis to determine whether it is more cost effective to build, lease or charter a new construction ship.

4.1 Maintenance

The FRAM Plan includes routine maintenance and an extensive program of critical maintenance of the existing fleet. Critical maintenance includes repair, upgrades, replacement and modifications of ship systems, subsystems and equipment. Critical maintenance is less comprehensive than RTE, but will improve a ship's condition to allow safe and effective operation to meet mission requirements until it is replaced or an RTE is performed. Critical maintenance items are generally required because maintenance has been deferred in previous years due to insufficient resources.

4.2 Requirements Definition

Detailed requirements will be defined for new ships, conversions, RTEs of existing ships, small boats, and related scientific mission equipment. Staffing and other analyses will be conducted to help define ship requirements.

4.3 Repair to Extend

The RTE portion of the program will take eight of the ships in the existing fleet and repair and modernize them over the next five years. This effort is concentrated in the earlier portion of the program. RTE is not intended to be a complete rehabilitation of these ships, rather to do only what is necessary for these ships to perform their mission reliably until a replacement ship is operational, usually eight to 10 years. After the required modifications are known and a detailed specification package has been prepared and costed, an economic decision will be made to proceed with the RTE or use another avenue to secure the necessary seatime. Ships being replaced earlier in the program will not go through the RTE process. Where possible, backfill chartering will provide DAS while an existing ship is in RTE.

4.4 Conversions

Conversions of relatively new ships will also be considered. When a reasonably new platform (the Navy T-AGOS is a good example) becomes available, design studies will be conducted to determine if the ship can be converted to meet known NOAA mission requirements. If the ship can be satisfactorily and economically modified, a conversion package will be developed and released to the shipbuilding community. The current plan includes conversion of up to six T-AGOS ships.

4.5 Economic Analysis

An economic analysis will be conducted for each new ship type to determine the most cost effective way to acquire the ship asset. After draft ship and mission requirements have been identified and documented, feasibility studies are conducted. The results of these feasibility studies are used in the development of the final requirements document and as the basis for the economic analysis for that particular ship type. The economic model calculates the net present value of the life cycle cost of the ship in accordance with OMB Circular A-94. The model compares life cycle cost for government owned and operated, government owned and contractor operated, contractor owned and operated, and contractor owned and government operated. The results of this

model combined with other factors, will be used by the NOAA Administrator to make the decision on how to acquire and operate the new ship.

If the ship is to be leased or chartered, a performance type specification will be prepared, based on the final ship and mission requirements document.

4.6 National Performance Review

As part of the President's National Performance Review (NPR), NOAA will experiment with a program of public/private competition to help fulfill NOAA's required number of DAS. The competition will also be used to determine areas where private industry has the interest and capability to meet some of NOAA's DAS needs and to assess industry costs. The results of this competition combined with the economic analysis results will be used in the decision process on the size and mix of the future NOAA fleet.

4.7 Chartering

Chartering will be used to meet NOAA's needs through several approaches. As mentioned in Section 1.3, some variable program needs will continue to be met directly by NOAA programs by chartering. Leasing or chartering will also be used where effective and efficient to meet some long-term needs as described in Section 4.5. Additionally, charter will be used to meet some backfill requirements, where possible, when NOAA ships are out of service.

4.8 New Construction

If NOAA is going to build the ship, a review of existing designs will be conducted to see if an "off the shelf" solution is available. An example of this is the NOAA option for one AGOR 23 class ship in a U.S. Navy contract. This ship meets NOAA's requirements for a medium endurance oceanographic ship. Use of this existing design will save significantly on engineering costs. It also will result in a lower acquisition cost since the NOAA ship is combined with the U.S. Navy ships for a total buy of three. Modification of existing designs will also be used when possible.

When an existing design is not available to meet the specific ship replacement requirements, either a Circular of Requirements (COR) or a government developed contract design package will be used. A COR is a document issued to the shipbuilding industry requesting their proposed ship design solutions to meet NOAA's requirements. Two or three shipbuilders will be selected and funded to develop more complete design packages. Ultimately, one

builder will be selected to produce the detailed design and construct the ship design it has developed.

For some new construction ships, a more thorough design will be prepared by NOAA, including a detailed specification package. This approach will be used for the larger, more complex ships or where several of one class of ships is being acquired.

During the development of all designs, CORs, and conversions, a concerted effort will be made to lower future maintenance and operating costs. Lower maintenance equipment will be specified and the use of automation in hull, mechanical and electrical systems will be encouraged where specific reductions in manning and operating costs can be determined. Standardization of systems, especially mission equipment, will be followed where practicable to reduce training requirements and to ease the support costs in the future.

In order to procure these new assets cost effectively, ships acquired through either new construction, conversion, or build and charter will be designed to commercial marine standards, including United States Coast Guard, Public Health, and the American Bureau of Shipping standards.

4.9 Small Craft

Several of NOAA's small craft that support scientific missions of NOAA laboratories are also in need of being replaced. These small craft are used to conduct those of NOAA's oceanic studies and survey activities that are concentrated in the coastal regions of the United States. For missions where long transits, heavy gear, and elaborate equipment are not required, or for work in restricted and shallow waters, these craft are capable, more cost effective, and often preferable to a larger platform. Missions typically conducted by NOAA small craft include: biological, chemical, and physical sampling in the Great Lakes; nautical charting of bays, harbors, and approaches; and studies of nearshore fisheries such as lobsters, salmon, and species habitat destruction by pollutants.

5.0 Organizational Plan and Responsibility

The Office of NOAA Corps Operations has the responsibility for management of the FRAM Program. The Office of NOAA Corps Operations, working with the ship users, defines the ships' operational characteristics and mission requirements and produces a formal requirements document for each ship. After an economic analysis is conducted, an appropriate acquisition approach for each new ship type will be determined, e.g., government construction, lease, or charter. The Systems Acquisition Office (SAO) previously known as the Systems Program Office, was established by NOAA to manage major systems acquisitions. The SAO

has been assigned the responsibility for the designs, technical specification development, contracts, and execution of the RTE, conversion, and new ship acquisition portions of the FRAM Program, including acquisition of mission equipment. Small boat design and procurement will be executed by the Office of NOAA Corps Operations.

As design studies are conducted, the results will be fed back to ONCO and the platform users to ensure that the designs meet their needs and are affordable. Often, especially in the early stages of requirements definition, this feedback process will result in modifications to the requirements. This iterative process will be conducted for each type of ship in the program. A process has been established to ensure participation by all parties in the definition of requirements and in the design development.

PART III - PROPOSED SCHEDULE

6.0 Proposed Schedule

6.1 Fleet Mix

In Section 2, NOAA's mission requirements were described and a mix of various ship sizes and types to provide a level of 5,760 DAS was defined. This breakout is shown in Table 3. A proposed 15 year plan has been developed to deliver these new assets to NOAA.

6.2 Fifteen Year Plan

Table 4 summarizes the first 15 years of the plan which is designed to deliver a 24 ship revitalized NOAA Fleet with a capacity of approximately 5,760 DAS. This plan assumes that after an RTE is performed on a particular ship, it remains in service until its replacement ship is built and delivered. The eight RTEs are listed, along with the conversion of up to six T-AGOS ships and construction of 18 new ships. The 18 new ships may be a mix of government owned, leased, or chartered. The schedule for the first 15 years of the plan is shown in Figure 2.

6.3 Fiscal Year 1992/93 Actions

The first FRAM Plan (issued in March 1991, then revised in September 1991) envisioned initial funding from Congress in FY 1993. In FY 1992, Congress appropriated $33.2 million to accelerate the process of replacing the fleet. An additional $30.0 million was appropriated for FY 1993. This funding is being used to:

a. Conduct ship condition surveys and prepare RTE requirements and specifications for the RTEs on OCEANOGRAPHER and DELAWARE II.

b. Conduct design efforts, conduct an economic analysis, prepare a COR, and develop the RFP package to be issued in 1994 for new construction of a coastal vessel to support Alaskan fisheries stock assessment and research.

c. Conduct design efforts, conduct an economic analysis and prepare a COR for new construction of a nearshore Item Investigation Platform to support NOAA's mapping and charting mission.

d. Procure a sonar in accordance with congressional language.

e. Acquire 3 nearly new, surplus Navy T-AGOS ships.

f. Conduct design studies for conversion of Navy T-AGOS ships and develop a conversion specification to convert a T-AGOS to support the TAO array mission.

g. Conduct design studies for conversion of Navy T-AGOS ships and develop a conversion specification to convert a T-AGOS to support a mapping and charting mission.

h. Conduct design studies for outyear ships.

i. Begin design studies to replace the Great Lakes Research Laboratory (GLERL) boat SHENEHON.

j. Develop requirements documents for near term RTEs, conversions, new construction ships, and small boats.

k. Perform routine and critical maintenance on existing ships.

6.4 Fiscal Year 1994 Plans

a. Complete RTE specifications, issue the RFP and award the DELAWARE II RTE. Complete RTE specifications and issue the RFP for the OCEANOGRAPHER RTE for award in FY 1995.

b. Award a new construction contract or exercise an existing option on a Navy contract for an oceanographic research ship.

c. Award competitive shipbuilder design contracts for a coastal class ship to support Alaskan fisheries stock assessment and research.

d. Complete the COR and issue the RFP for nearshore class charting ship competitive shipbuilder design contracts for award in FY 1995.

e. Complete conversion specifications, issue the RFP, and award a contract to convert a surplus Navy T-AGOS ship to support the TAO array mission.

f. Complete conversion specifications and issue an RFP for conversion of a surplus Navy T-AGOS ship to support a mapping and charting mission for award in FY 1995.

g. Develop requirements documents for near-term RTEs, conversions, new construction ships and small boats.

h. Continue design and specification development for the replacement of the GLERL boat SHENEHON.

i. Perform routine and critical maintenance on existing ships.

6.5 Fiscal Year 1995 Details

NOAA's FRAM Program continues the efforts started in FY 1992/93/94. Scheduling of the activities listed below is dependant on budgetary resources.

a. Requirements Definition - Detailed requirements will be defined for new ships, conversions, RTEs of existing ships, small boats, and related scientific mission equipment. Staffing and other analyses will be conducted to help define ship requirements.

b. Repairs to Extend NOAA Ship Service Life - Current plans call for the NOAA Ships OCEANOGRAPHER and DELAWARE II to undergo RTE. This effort will include repairs and upgrades of major ship systems, such as piping and electrical distribution systems, main engines and generators, and replacement and upgrades of mission equipment. Repair to extend will allow reliable productive operation for eight to 10 years until the ships are replaced. Specification development for RTE of four additional NOAA ships will be started.

c. Acquisition and Conversion of Surplus Navy T-AGOS Ships - A Navy T-AGOS ship, constructed less than five years ago as a surveillance ship will be converted to support mapping and charting missions with an overall cost avoidance of more than $55 million. Current plans include additional T-AGOS ships to be acquired from the Navy for future conversion to meet NOAA requirements and conversion designs and specifications will be developed.

d. Design and Construction - Shipbuilder design competition will be completed and a detailed design and construction contract will be awarded for a coastal class ship to support Alaskan fisheries stock assessment and research. This ship will incorporate modern labor-saving ship technology, such as an automated engine room and instrumentation to meet fisheries comprehensive scientific requirements. Shipbuilder design contracts will be competitively awarded for a nearshore class charting ship utilizing Small Waterplane Area Twin Hull (SWATH) technology.

e. Chartering - NOAA will continue charter arrangements with the commercial sector and University National Oceanographic Laboratory System (UNOLS) to meet some backfill requirements while NOAA ships are out of service for RTE. Backfill charter will also be used, where possible, for ships that must be retired before their replacements are operational. In addition, an economic analysis comparing government purchase and operation with the lease of contractor owned and/or operated ships will be conducted before new ship construction commences. The output of this analysis coupled with the consideration of other risks and benefits will be used to determine if NOAA should own and operate, or lease contractor owned and/or operated ships. NOAA will also continue with the NPR effort described in Section 4.6.

f. Small Craft - One small craft will be designed and procurement initiated for a replacement of NOAA's Great Lakes research 35-year-old vessel.

g. Technology Development - Existing technology will be developed or applied to meet NOAA's operational needs. A pilot project will continue to incorporate existing hydrographic data acquisition system technology into NOAA's routine charting operations. Enhanced ship to shore data communications will be explored to assess the potential for moving some data processing and quality control functions from the ship to shore facilities, and approaches used by other countries for environmental data collection will be assessed for possible application by NOAA.

6.6 FY 1996 and Beyond

The entire ship program, including longer term actions, is shown in the following NOAA FRAM schedule including the planned RTE of existing ships, conversion of T-AGOS ships and construction of new ships. Some additional small boats will be constructed to support NOAA program requirements.

Ship	Mission	RTE/YR	Replacement Year Awarded	Ships Year Delivered
	High Endurance			
OCEANOGRAPHER (OC)	Oceanography	95	01	04
DISCOVERER (DI)	OCEO	N/A	99	02
MALCOLM BALDRIDGE (MB)	OCEO/LMR	N/A	N/A	N/A
SURVEYOR (SU)	LMR/OCEO	N/A	N/A	N/A
	Medium Endurance			
AGOR (USN 23 CL)	Oceanography	N/A	96	99
	Oceanography	N/A	94	95
	Charting	N/A	96	97
Mt. MITCHELL (MI)	Charting	N/A	97	98
	Charting	N/A	98	99
RAINIER (RA)	Charting	98	04	07
FAIRWEATHER (FA)	Charting	97	03	06
MILLER FREEMAN (MF)	LMR	97	04	07
ALBATROSS IV (AL)	LMR	N/A	98	01
TOWNSEND CROMWELL (TC)	LMR	N/A	99	02
OREGON II (OT)	LMR	N/A	00	03
DELAWARE II (DE)	LMR	94	02	05
DAVID STARR JORDAN (DS)	LMR	97	00	03
	LMR	N/A	02	05
	LMR	N/A	03	06
	Low Endurance			
DAVIDSON (DA)	Charting	N/A	N/A	N/A
WHITING (WH)	Charting	N/A	95	96
MCARTHUR (AR)	OCEO/LMR	N/A	97	98
CHAPMAN (CH)	LMR	98	05	08
JOHN N. COBB (JC)	LMR	N/A	95	98
	LMR	N/A	97	00
	Nearshore/Estuarine			
RUDE (RU)	Charting	N/A	96	99
HECK (HE)	Charting	N/A	N/A	N/A
FERREL (FE)	Oceanography	97	06	09

Table 4

OMB SUBMISSION
NOAA FLEET REPLACEMENT AND MODERNIZATION
5,760 DAYS-AT-SEA

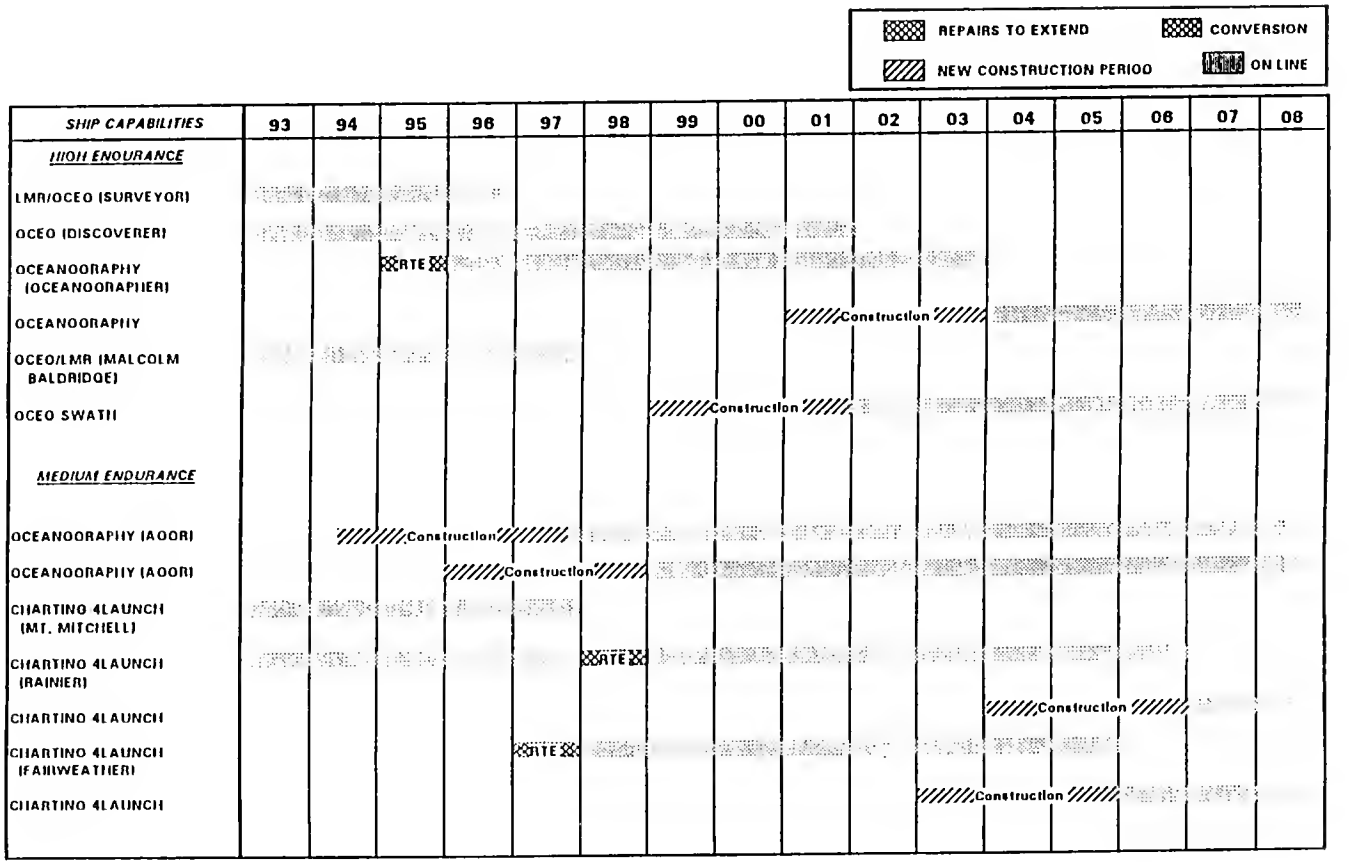

Figure 2a

OMB SUBMISSION
NOAA FLEET REPLACEMENT AND MODERNIZATION
5,760 DAYS-AT-SEA
(continued)

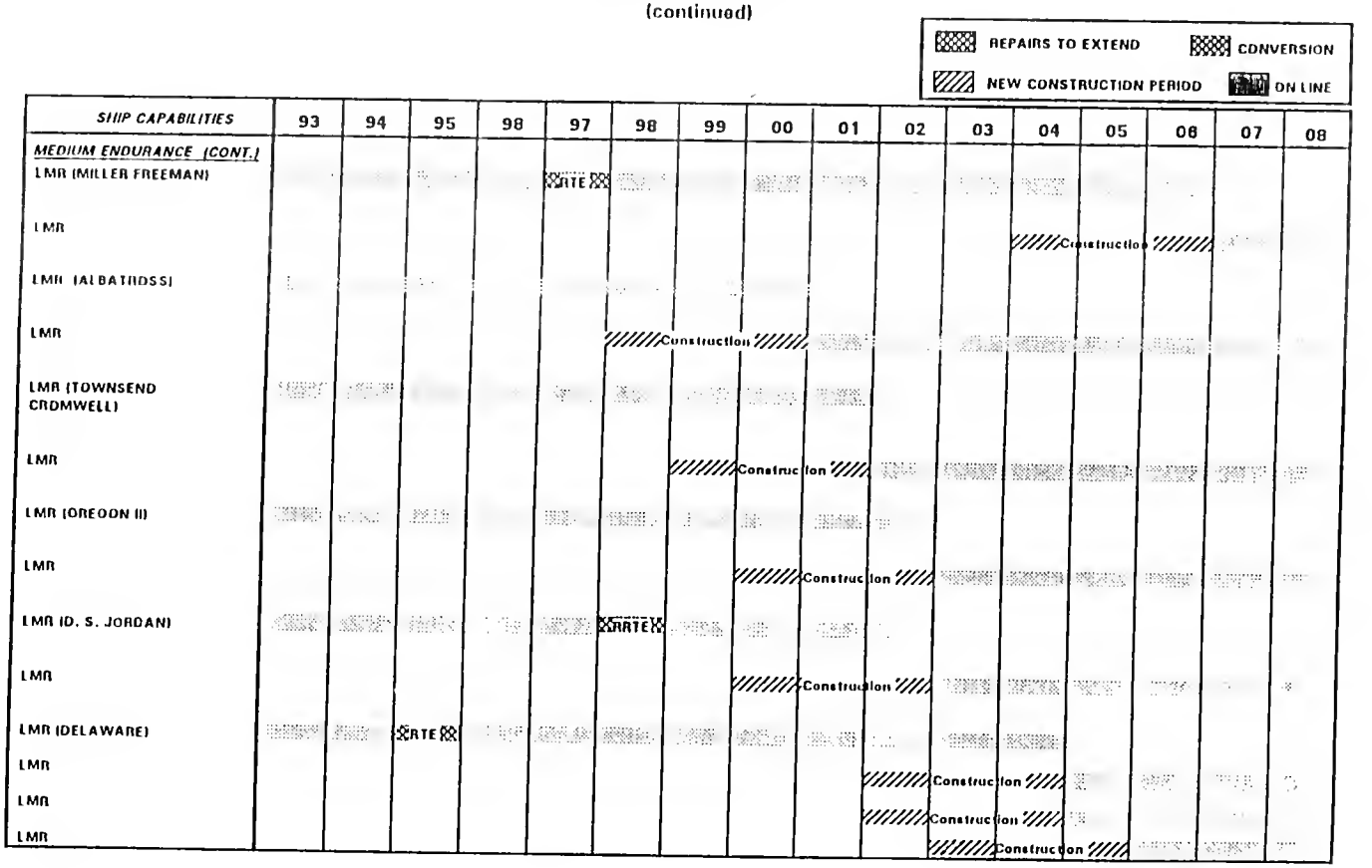

Figure 2b

OMB SUBMISSION
NOAA FLEET REPLACEMENT AND MODERNIZATION
5,760 DAYS-AT-SEA
(continued)

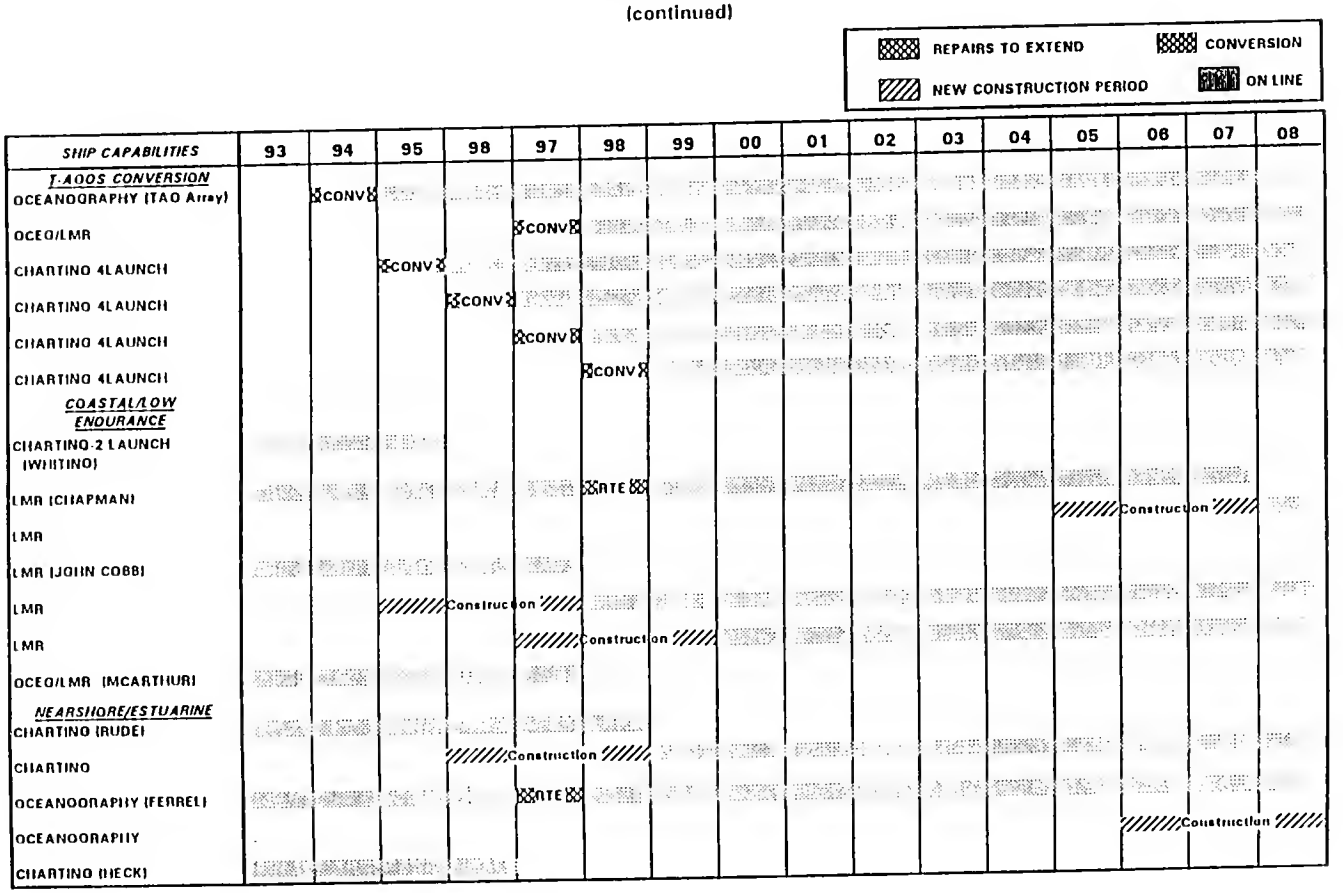

Figure 2c

U.S. House of Representatives
Committee on
Merchant Marine and Fisheries
Room 1334, Longworth House Office Building
Washington, DC 20515-6230

October 14, 1993

BACKGROUND MEMORANDUM

TO: Members, Subcommittee on Oceanography, Gulf of Mexico, and the Outer Continental Shelf

FROM: Subcommittee Staff

SUBJ: NOAA Fleet Modernization Hearing

On Thursday, October 21, the Subcommittee on Oceanography, Gulf of Mexico, and the Outer Continental Shelf will hold a hearing on the modernization and replacement of the National Oceanic and Atmospheric Administration (NOAA) oceanographic fleet. The hearing will convene at 2:00 P.M. in room 1334, Longworth House Office Building.

Witnesses testifying at the hearing will include representatives from NOAA, the General Accounting Office, the University National Oceanographic Laboratory (UNOLS), the Shipbuilder's Council of America, and a private contractor.

BACKGROUND

The history of the NOAA fleet can be traced to 1807 when President Jefferson commissioned the first survey of the U.S. coastline. The modern NOAA fleet dates to 1970 when NOAA was created by combining the Bureau of Commercial Fisheries, the Coast and Geodetic Survey and other components into a single agency.

The current fleet consists of 23 vessels ranging in length from 86 to 303 feet (See attached chart for vessel identification, home ports, and missions). The fleet supports NOAA's programs in nautical charting, bathymetric mapping, fisheries research, resource assessment, marine environmental baseline assessment, coastal ocean circulation, climate and global change research, and general oceanic and atmospheric research. The fleet is managed by the Office of

NOAA Corps Operations and operated by NOAA Corps officers and wage marine sailors.

Concerned with the age of the majority of its vessels, NOAA began assessing the condition of the fleet and planning for replacement and modernization in the late 1980s. Specific steps and oversight activities which have taken place are summarized below.

FLEET EVALUATION STUDY - 1987

In response to mounting concern over the aging of its fleet, the agency commissioned a private contractor (Advanced Technology, Inc.) to evaluate the fleet's condition and recommend a future course of action. The study concluded that:

(1) the general overall condition of the fleet was superior to commercial vessels of similar age;
(2) all of the NOAA fleet vessels faced block obsolescence due to their age;
(3) unless NOAA immediately undertook a major modernization and life-extension program for the fleet, all of its vessels would need to be replaced at considerably greater cost; and
(4) four of the fleet's vessels (ALBATROSS IV, TOWNSEND CROMWELL, JOHN N. COBB, and SURVEYOR) required replacement, instead of modernization.

NOAA was also provided with a comprehensive 10-year plan for fleet revitalization and replacement.

NATIONAL ACADEMY OF SCIENCES STUDY - 1988

In 1988, the National Academy of Sciences Marine Board's Committee on Alternative Strategies for Obtaining Ship Services completed a study the possibility of NOAA chartering ships to perform some of its functions. The Marine Board issued the following recommendations:

(1) The need for ocean research and data acquisition is expected to increase as a result of the Exclusive Economic Zone Proclamation, the increased use of marine resources, the national commitment to global ocean investigation, and the level of future NOAA activities in bathymetry, fisheries and oceanography. The NOAA fleet will play an important role in accomplishing this task.

(2) In selected program areas, such as bathymetric surveys and fisheries, NOAA could potentially use chartering to help meet its ship needs and to bring new and more sophisticated vessels into national service.

(3) NOAA should commission a study to define the characteristics of an idealized fleet to meet present and projected ship needs, and should prepare a Request for Proposals for chartering ships to service one or more mission areas.

GAO REPORT TO THE MERCHANT MARINE AND FISHERIES COMMITTEE - 1989

In 1989, the General Accounting Office (GAO) completed its assessment of NOAA's research fleet. GAO analyzed NOAA's present and future mission requirements and reviewed NOAA's proposed fleet modernization plan. GAO recommended that:

(1) For NOAA to fulfill its mission effectively and efficiently, the Secretary of Commerce should ensure that NOAA, with departmental approval and support, officially adopt a plan to provide long-term ship support for its users.

(2) This plan should, among other things, provide flexibility so that NOAA can, if provided by Congress, exercise multiyear contracting authority to experiment with long-term chartering/leasing arrangements. Such an experiment should be used to determine the effectiveness of these arrangements in providing some of NOAA's future ship support.

COMMERCE DEPARTMENT INSPECTOR GENERAL AUDIT REPORT - 1990

In August of 1990, the Inspector General (IG) of the Department of Commerce published a report entitled "Earlier Fleet Studies were Inadequate for Determining NOAA Mission and Fleet Needs." The report recommended actions to strengthen NOAA's planning efforts. Subsequently, NOAA completed a three-phase study, used as the basis for developing its fleet modernization plan.

The IG recommended that NOAA should:

(1) make the modernization of the ocean fleet an urgent priority throughout the organization;
(2) propose a long-term, cost-effective fleet capability strategy beginning in FY 1993;
(3) establish a clear and objective methodology to analyze trade-offs between new-vessel performance and costs, taking into account life-cycle estimates;
(4) establish a fleet modernization program office to support strategic planning, technical analyses, and policy decisions;
(5) seek and maintain maximum cooperation with other vessel operators in the U.S. and abroad to respond in a cost-effective manner to oceanographic and atmospheric problems; and
(6) continue to manage and operate an oceanographic fleet effectively.

REPORT OF THE OCEANIC AND ATMOSPHERIC MANAGEMENT ADVISORY COMMITTEE (OAMAC) - 1992

The OAMAC Fleet Modernization Subcommittee's 1992 report to the Department of Commerce on the NOAA Fleet Replacement and Modernization Plan made the following points:

(1) reemphasized the urgent need to provide more modern equipment so that NOAA can meet its important, growing role in the marine sciences;
(2) recommended other cost-effective options for providing ship time be fully explored and resolved prior to plan approval;
(3) recommended greater use of various commonly available options such as turnkey contracting, medium-term leasing, and chartering to augment a NOAA core fleet capability, with a determination of the best mix of NOAA-owned and other vessels;
(4) recommended that costs of vessel design, construction, pooled equipment, and operations be reviewed by NOAA and relevant consulting and industry groups to ensure that they are reasonable and state-of-the-art; and
(5) recommended that the staffing policy and procedures of the NOAA vessels be thoroughly reviewed by a knowledgeable outside group.

INITIAL INSPECTOR GENERAL'S REPORT - 1992

In October, 1991, Congress appropriated $33.2 million to a new NOAA Fleet Modernization, Shipbuilding, and Conversion account. In the conference committee report accompanying the bill, the Department of Commerce Inspector General (IG) was asked to continue its review of NOAA's Fleet Modernization program, to monitor use of appropriated funds, and to file a report with the House and Senate appropriations committees every six months beginning April 1, 1992. Primary conclusions of the first report are listed below:

(1) The Fleet Replacement and Modernization (FRAM) Plan must acknowledge funding realities if the document is to provide a realistic basis for planning the future acquisition and use of ship resources.
(2) NOAA should direct that various FRAM scenarios be developed to reflect a range of funding levels over the implementation cycle, depicting the impact on missions, mix of ships, and acquisition strategies.
(3) NOAA should submit the FRAM plan to the Secretary for approval by June 1, 1992, and report on modernization progress to the Secretary.
(4) NOAA's System Procurement Office (SPO) has insufficient expertise to begin fleet acquisition activities and should put the necessary staff in place.
(5) SPO must initiate a continuing communication and coordination effort with the Office of NOAA Corps Operations.

NOAA FLEET MODERNIZATION ACT - 1992

On October 29, 1992, the NOAA Authorization Act (P.L. 102-567) was enacted and included the NOAA Fleet Modernization Act (Title VI, see attachment). This legislation authorized the Secretary of Commerce to implement a 15-year program to replace and modernize the NOAA fleet. Included in this authorization was a directive to the Secretary to develop and submit to Congress a fleet replacement and

modernization plan within 30 days of the date of enactment. The legislation further stated that NOAA could not enter into any contract for construction, lease, or service life extension of a vessel until submission of the plan to Congress. As of this date, the plan has not been submitted to Congress.

Additionally, the Act directed the General Accounting Office (GAO) to prepare a report to Congress within one year comparing the cost-efficiency, accounting, and other operating practices of the vessels of NOAA, UNOLS, other federal agencies and the U.S. private sector in meeting the missions of NOAA. GAO will present itspreliminary findings at the hearing.

INSPECTOR GENERAL'S REPORT - SEPTEMBER, 1993

In compliance with the directives of the Appropriation Committees, the Department of Commerce IG has continued to report every six months. The semiannual report for the period ending September 30, 1993, highlighted the following observations:

(1) Despite major changes due to the unexpected availability of U.S. Navy ships, NOAA has not revised the FRAM Plan and submitted it to the Secretary for approval.
(2) The NOAA Corps has done very little to consider contracting, chartering, or leasing of ships to meet mission requirements;
(3) Proposed ship capabilities should be reviewed by an independent consultant or industry group to ensure that the most economical and efficient types and sizes of ships are acquired.
(4) With the expected reduction in individual crew levels accompanying the modernization, NOAA should thoroughly review staffing levels. This review should also include an assessment of current staffing levels for the existing fleet to ensure that they are not excessive.
(5) Repair to extend (RTE) expenditures estimated to extend the life of NOAA ships by up to 10 years appear cost-effective considering the estimated cost of new ship construction. However, an independent review of ship design requirements should be completed before contracting for further RTEs. Also, the availability of additional Navy ships at low cost and the possibility of contracting, leasing, and chartering vessels should be considered as alternatives to RTEs.

FUNDING ISSUES

NOAA's fleet modernization study, completed in April 1991, presented several options for modernization of the NOAA fleet. The intermediate planning level, which would replace all NOAA vessels within 15 years and result in a fleet of 22 to 23 ships, would cost somewhere between $1.1 and $1.5 billion. NOAA considers this level of effort to be the minimum required to prevent degradation of NOAA's ocean missions.

NOAA's fiscal year (FY) 1992 appropriation provided $33.2 million for fleet modernization. In FY 1993, $30 million was provided, including $22 million for the conversion of a vessel acquired from the Navy for oceanographic research uses. NOAA has acquired three of these T-AGOS class surveillance vessels from the Navy. The other two will likely be converted for nautical charting uses.

The conferees on the Commerce Appropriations bill are expected to provide approximately $77 million for fleet modernization for FY 94, including full funding for the purchase of an AGOR class general purpose oceanographic research ship under a Navy contract. For FY 1995, the Department of Commerce has requested a significant increase above the FY 1994 request for NOAA fleet modernization. It is not known at this time how much, if any, of this increase the Office of Management and Budget will approve.

ISSUES

When will NOAA provide the Fleet Replacement and Modernization Plan to Congress?

How has NOAA spent the funds appropriated to this point for modernization? How does NOAA plan to enter into contracts for modernization before the plan is submitted to Congress (as required by P.L. 102-567)?

How serious is NOAA's commitment to examining other sources of ship time (chartering, leasing, etc.) as an alternative to maintaining in-house capabilities?

Has NOAA arranged for outside review of capabilities and design requirements for new and modernized ships?

How does the costs for NOAA's planned vessels compare with others of similar designs and capabilities?

Has NOAA reviewed staffing requirements as related to the modernization plan?

Is there an inherent conflict of interest with the Office of NOAA Corps having responsibility for fleet modernization efforts?

NOAA SHIPS

Active Ships	Year Commissioned	Length ft	Homeport	*Mission
Class I				
DISCOVERER	1967	303	Seattle, WA	1,4
SURVEYOR	1960	292	Seattle, WA	1,4
MALCOLM BALDRIGE	1970	278	Miami, FL	1,4
Class II				
MT. MITCHELL	1968	231	Norfolk, VA	1,4
RAINIER	1968	231	Seattle, WA	3
MILLER FREEMAN	1974	215	Seattle, WA	2,5
Class III				
DAVIDSON	1967	175	Seattle, WA	3
MCARTHUR	1966	175	Seattle, WA	2,5
OREGON II	1967	170	Pascagoula, MS	2
WHITING	1963	163	Norfolk, VA	3,5
CLASS IV				
TOWNSEND CROMWELL	1975	163	Honolulu, HI	2
DAVID STARR JORDAN	1966	171	San Diego, CA	2
DELAWARE II	1968	155	Woods Hole, MA	2
FERREL	1968	133	Norfolk, VA	5
CHAPMAN	1980	127	Pascagoula, MS	2
ALBATROSS IV	1963	187	Woods Hole, MA	2
CLASS V				
RUDE	1967	90	Norfolk, VA	3
HECK	1967	90	Norfolk, VA	3
JOHN N. COBB	1950	93	Seattle, WA	2
Inactive Ships				
CLASS I				
OCEANOGRAPHER	1966	303	Seattle, WA	1
CLASS II				
FAIRWEATHER	1968	231	Seattle, WA	3
CLASS III				
ADVENTUROUS	1988	224	Norfolk, VA	
TITAN	1989	224	Seattle, WA	
RELENTLESS	1990	224	Norfolk, VA	

* 1 = Oceanographic Research; 2 = Fisheries Research; 3 = Hydrographic Surveys; 4 = Bathymetric Mapping; 5 = Environmental Assessment

nous species, and swimmability) and determine the ecological impacts resulting from major point source discharges.

"(6) MEMORANDUM OF UNDERSTANDING.—Prior to implementing any intensive coastal water quality monitoring program under this subsection, the Administrator and the Under Secretary shall enter into a Memorandum of Understanding to implement the intensive coastal water quality monitoring programs and may extend the memorandum of Understanding to include other appropriate Federal agencies. The Memorandum of Understanding shall identify the monitoring and reporting responsibilities of each agency and shall encourage the coordination of monitoring activities.

"(7) IMPLEMENTATION.—(A) The Administrator, the Under Secretary, and the Governor of each State having waters subject to an intensive coastal water quality monitoring program developed pursuant to this subsection shall ensure compliance with that program.

"(B) The Administrator and the Under Secretary are authorized to enter into cooperative agreements to provide financial assistance to non-Federal agencies and institutions to support implementation of intensive monitoring programs under this subsection. Federal financial assistance may only be provided on the condition that not less than fifty percent of the costs of the monitoring to be conducted by a non-Federal agency or institution is provided from non-Federal funds.

"(e) COMPREHENSIVE IMPLEMENTATION STRATEGY.—

"(1) IN GENERAL.—Within 1 year after the date of enactment of this title, the Administrator and the Under Secretary shall jointly submit to Congress a Comprehensive Implementation Strategy identifying the current and planned activities to implement the Comprehensive Coastal Monitoring Program pursuant to this section.

"(2) CONSULTATION.—The Administrator and the Under Secretary shall consult with the National Academy of Sciences, the Director of the United States Fish and Wildlife Service, the Director of the Minerals Management Service, the Commandant of the Coast Guard, the Secretary of the Navy, the Secretary of Agriculture, the heads of any other relevant Federal or regional agencies, and the Governors of coastal States in developing the Strategy.

Federal Register, publication

"(3) PUBLIC COMMENT.—Not less than 3 months before submitting the Strategy to Congress, the Administrator and the Under Secretary shall jointly publish a draft version of the Strategy in the Federal Register and shall solicit public comments regarding the Strategy.

"(4) MEMORANDUM OF UNDERSTANDING.—Within 1 year after submission of the Strategy under paragraph (1), the Administrator and the Under Secretary shall enter into a Memorandum of Understanding with appropriate Federal agencies necessary to effect the coordination of Federal coastal monitoring programs. The Memorandum of Understanding shall identify the monitoring and reporting responsibilities of each agency and shall encourage the coordination of monitoring activities where posaible.

SEC. 504. REPORT TO CONGRESS. 33 US

"On September 30 of each other year beginning in 1993, the Administrator and the Under Secretary shall jointly submit to the Committee on Commerce, Science, and Transportation and the Committee on Environment and Public Works of the Senate and the Committee on Merchant Marine and Fisheries and the Committee on Public Works and Transportation of the House of Representatives a report describing the condition of the Nation's coastal ecosystems, including the following:

"(1) an assessment of the status and health of the Nation's coastal ecosystems;

"(2) an evaluation of environmental trends in coastal ecosystems;

"(3) identification of sources of enironmental degradation affecting coastal ecosystems;

"(4) an assessment of the extent to which floatables degrade coastal ecosystems, including trends in the accumulation of floatables and the threat posed by floatables to aquatic life;

"(5) an assessment of the impact of government programs designed to abate the degradation of coastal ecosystems:

"(6) an evaluation of the adequacy of monitoring programs and identification of any additional program elementa which may be needed; and

"(7) a summary of monitoring results in areas monitored under subsection 503(d).

"SEC. 505. AUTHORIZATION OF APPROPRIATIONS. 33 US

"(a) NOAA AUTHORIZATION.—For development and implementation of programs under this title, including financial assistance to non-Federal agencies and institutions to support implementation of intensive monitoring programs under section 503(d), there is authorized to be appropriated to the Under Secretary amounts not to exceed $5,000,000 for fiscal year 1993, $8,000,000 for fiscal year 1994, $10,000,000 for fiscal year 1995, and $12,000,000 for fiscal year 1996.

"(b) EPA AUTHORIZATION.—For development and implementation of programs under this title, including financial assistance to non-Federal agencies and institutions to support implementation of intensive monitoring programs under section 503(d), there is authorized to be appropriated to the Administrator amounts not to exceed $5,000,000 for fiscal year 1993, $8,000,000 for fiscal year 1994, and $10,000,000 for fiscal year 1995, and $12,000,000 for fiscal year 1996.".

TITLE VI—NOAA FLEET MODERNIZATION

NOAA Moder Act 33 US note

SEC. 601. SHORT TITLE.

This title may be cited as the "NOAA Fleet Modernization Act".

SEC. 602. DEFINITIONS. 33 US

In this title, the term—

(1) "NOAA" means the National Oceanic and Atmospheric Administration within the Department of Commerce.

(2) "NOAA fleet" means the fleet of research vessels owned or operated by NOAA.

(3) "Plan" means the NOAA Fleet Replacement and Modernization Plan described in section 604.

(4) "Secretary" means the Secretary of Commerce.

(5) "UNOLS" means University-National Oceanographic Laboratory System.

33 USC 891a

SEC. 603. FLEET REPLACEMENT AND MODERNIZATION PROGRAM.

The Secretary is authorized to implament, subject to the requirements of this Act, a 15-year program to replace and modernize the NOAA fleet.

33 USC 891b

SEC. 604. FLEET REPLACEMENT AND MODERNIZATION PLAN.

(a) IN GENERAL.—To carry out the program authorized in section 603, the Secretary shall develop and submit to Congress a replacement and modernization Plan for the NOAA fleet covering the years authorized under section 610.

(b) TIMING.—The Plan required in subsection (a) shall be submitted to Congress within 30 days of the date of enactment of this Act, and updated on an annual basis.

(c) PLAN ELEMENTS.—The Plan required in subsection (a) shall include the following—

(1) the number of vessels proposed to be modernized or replaced, the schedule for their modernization or replacement, and anticipated funding requirements;

(2) the number of vessels proposed to be constructed, leased, or chartered;

(3) the number of vessels, or days at sea, that can be obtained by using the vessels of the UNOLS;

(4) the number of vessels that will be made available to NOAA by the Secretary of the Navy, or any other federal official, and the terms and conditions for their availability;

(5) the proposed acquisition of modern scientific instrumentation for the NOAA fleet, including acoustic systems, data transmission positioning and communication systems, physical, chemical, and meteorological oceanographic systems, and data acquisition and processing systems; and

(6) the appropriate role of the NOAA Corps in operating and maintaining the NOAA fleet.

(d) CONTRACTING LIMITATION.—The Secretary may not enter into any contract for the construction, lease, or service life extension of a vessel of the NOAA fleet before the date of the submission to Congress of the Plan required in subsection (a).

33 USC 891c

SEC. 605. DESIGN OF NOAA VESSELS.

(a) DESIGN REQUIREMENT.—Except for the vessel designs identified under subsection (b), the Secretary, working through the Office of the NOAA Corps Operations and the Systems Procurement Office, shall—

(1) prepare requirements for each class of vessel to be constructed or converted under the Plan; and

(2) contract competitively from nongovernmental entities with expertise in shipbuilding for vessel design and construction based on the requirements for each class of vessel to be acquired.

Reports

(b) EXCEPTION.—The Secretary shall—

(1) report to Congress identifying any existing vessel design or design proposal that meets the requirements of the Plan within 30 days after the date of enactment of this Act and shall promptly advise the Congress of any modification of these designs; and

(2) submit to Congress as part of the annual update of the Plan required in section 604, any subsequent existing vessel design or design proposals that meet the requirements of the Plan.

SEC. 606. CONTRACT AUTHORITY. 33 US

(a) MULTIYEAR CONTRACTS.—

(1) IN GENERAL.—Subject to paragraphs (2) and (3), and notwithstanding section 1341 of title 31, United States Code and section 3732 of the Revised Statutes of the United States (41 U.S.C. 11), the Secretary may acquire vessels for the NOAA fleet by purchase, lease, lease-purchase, or otherwise, under one or more multiyear contracts.

(2) REQUIRED FINDINGS.—The Secretary may not enter into a contract pursuant to this subsection unless the Secretary finds with respect to that contract that—

(A) there is a reasonable expectation that throughout the contemplated contract period the Secretary will request from Congress funding for the contract at the level required to avoid contract termination; and

(B) the use of the contract will promote the best interests of the United States by encouraging competition and promoting economic efficiency in the operation of the NOAA fleet.

(3) REQUIRED CONTRACT PROVISIONS.—The Secretary may not enter into a contract pursuant to this subsection unless the contract includes—

(A) a provision under which the obligation of the United States to make payments under the contract for any fiscal year is subject to the availability of appropriations provided in advance for those payments;

(B) a provision that specifies the term of effectiveness of the contract; and

(C) appropriate provisions under which, in case of any terminstion of the contract before the end of the term specified pursuant to subparagraph (B), the United States shall only be liable for the lesser of—

(i) an amount specified in the contract for such a termination; or

(ii) amounts that—

(I) were sppropriated before the date of the termination for the performance of the contract or for procurement of the type of acquisition covered by the contract; and

(II) are unobligated on the date of the termination.

(b) SERVICE CONTRACTS.—Notwithstanding any other provision of law, the Secretary may enter into multiyear contracts for oceanographic research, fisheries research, and mapping and charting services to assist the Secretary in fulfilling NOAA missions. The Secretary may only enter into these contracts if—

(1) the Secretary finds that it is in the public interest to do so;

(2) the contract is for not more than 7 years; and

(3)(A) the cost of the contract is less than the cost (including the cost of operation, maintenance, and personnel) to the NOAA of obtaining those services on NOAA vessels; or

(B) NOAA vessels are not available or cannot provide those services.

(c) BONDING AUTHORITY.—Notwithstanding any other law, the Secretary may not require a contractor for the construction, alteration, repair or maintenance of a NOAA vessel to provide a bid bond, payment bond, performance bond, completion bond, or other surety instrument in an amount greater than 20 percent of the value of the base contract quantity (excluding options) unless the Secretary determines that requiring an instrument in that amount will not prevent a responsible bidder or offeror from competing for the award of the contract.

33 USC 891e

SEC. 607. RESTRICTION WITH RESPECT TO CERTAIN SHIPYARD SUBSIDIES.

(a) IN GENERAL.—The Secretary of Commerce may not award a contract for the construction, repair (except emergency repairs), or alteration of any vessel of the National Oceanic and Atmospheric Administration in a shipyard, if that vessel benefits or would benefit from significant subsidies for the construction, repair, or alteration of vessels in that shipyard.

(b) DEFINITION.—In this section, the term "significant subsidy" includes, but is not limited to, any of the following:

(1) Officially supported export credits.

(2) Direct official operating support to the commercial shipbuilding and repair industry, or to a related entity that favors the operation of shipbuilding and repair, including but not limited to—

(A) grants;

(B) loans and loan guarantees other than those available on the commercial market;

(C) forgiveness of debt;

(D) equity infusions on terms inconsistent with commercially reasonable investment practices; and

(E) preferential provision of goods and services.

(3) Direct official support for investment in the commercial shipbuilding and repair industry, or to a related entity that favors the operation of shipbuilding and repair, including but not limited to the kinds of support listed in paragraph (2)(A) through (E), and any restructuring support, except public support for social purposes directly and effectively linked to shipyard closures.

(4) Assistance in the form of grants, preferential loans, preferential tax treatment, or otherwise, that benefits or is directly related to shipbuilding and repair for purposes of research and development that is not equally open to domestic and foreign enterprises.

(5) Tax policies and practices that favor the shipbuilding and repair industry, directly or indirectly, such as tax credits, deductions, exemptions, and preferences, including accelerated depreciation, if such benefits are not generally available to persons or firms not engaged in shipbuilding or repair.

(6) Any official regulation or practice that authorizes or encourages persons or firms engaged in shipbuilding or repair to enter into anticompetitive arrangements.

(7) Any indirect support directly related, in law or in fact, to shipbuilding and repair at national yards, including any public assistance favoring shipowners with an indirect effect on shipbuilding or repair activities, and any assistance provided to suppliers of significant inputs to shipbuilding, which results in benefits to domestic shipbuilders.

(8) Any export subsidy identified in the Illustrative List of Export Subsidies in the Annex to the Agreement on Interpretation and Application of Articles VI, XVI, and XXIII of the General Agreement on Tariffs and Trade or any other export subsidy that may be prohibited as a result of the Uruguay Round of trade negotiations.

SEC. 608. USE OF VESSELS. 33 US

(a) VESSEL AGREEMENTS.—In implementing the NOAA fleet replacement and modernization program, the Secretary shall use excess capacity of UNOLS vessels where appropriate and may enter into memoranda of agreement with the operators of these vessels to carry out this requirement.

(b) REPORT TO CONGRESS.—Within one year after the date of enactment of this Act, the Comptroller General of the United States shall provide a report to Congress, in consultation with the Secretary, comparing the cost-efficiency, accounting, and operating practices of the vessels of NOAA, UNOLS, other Federal agencies, and the United States private sector in meeting the missions of NOAA.

SEC. 609. INTEROPERABILITY. 33 US

The Secretary shall consult with the Oceanographer of the Navy regarding appropriate measures that should be taken, on a reimbursable basis, to ensure that NOAA vessels are interoperable with vessels of the Department of the Navy, including with respect to operation, maintenance, and repair of those vessels.

SEC. 610. AUTHORIZATION OF APPROPRIATIONS. 33 US

(a) IN GENERAL.—There are authorized to be appropriated to the Secretary for carrying out this title—

(1) $50,000,000 for fiscal year 1993;

(2) $100,000,000 for fiscal year 1994; and

(3) such sums as are necessary for each of the fiscal years 1995, 1996, and 1997.

(b) LIMITATION ON FLEET MODERNIZATION ACTIVITIES.—All National Oceanic and Atmospheric Administration fleet modernization shipbuilding, and conversion shall be conducted in accordance with this title.

TITLE VII—WEATHER SERVICE MODERNIZATION

Weat Mode Act 15 US

SEC. 701. SHORT TITLE.

This title may be cited as the "Weather Service Modernization Act".

SEC. 702. DEFINITIONS.

For the purposes of this title, the term—

(1) "automate" means to replace employees with automated weather service equipment;

(2) "change operations at a field office" means transfer service responsibility, commission weather observation systems,

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